

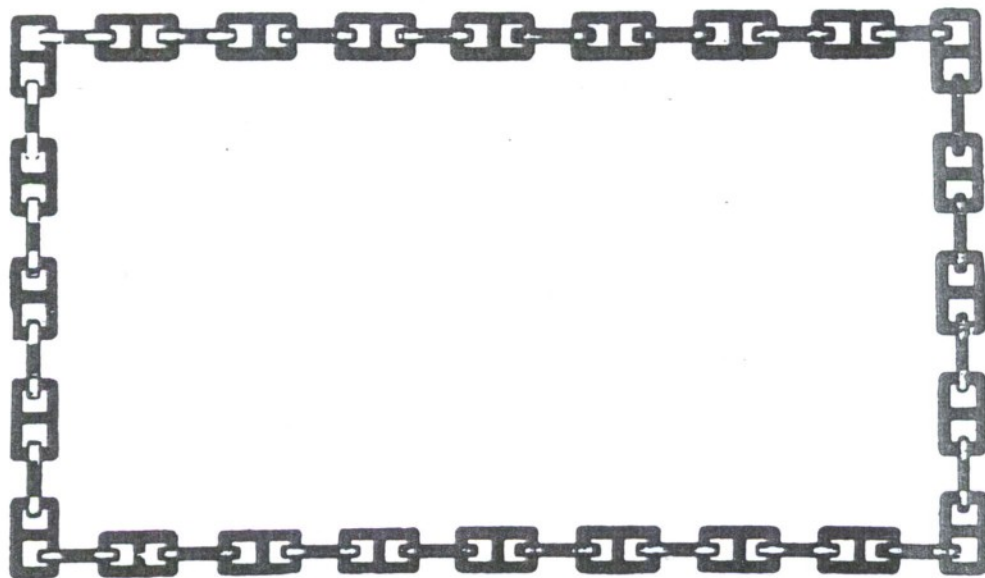
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WASHINGTON NAVY YARD
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EXPERIMENTAL DIVING UNIT REPORT
10-72

DIVER ANTHROPOMETRICS

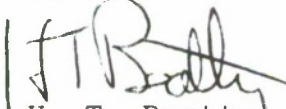
By

H. T. Beatty
T. E. Berghage

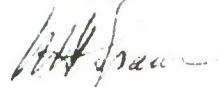
1 June 1972

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ABSTRACT

To aid the design engineer in the development of future U.S. Navy diving systems and equipment a comprehensive anthropometric study was undertaken. Fifty-four anthropometric measures, two pulmonary function measures, and three derived body measures were obtained on 100, 41, and 100 U. S. Navy Divers respectively. Descriptive statistics and measures of interrelationship are given for each measured and derived variable. The minimum number of anthropometric variables needed was determined by factor analysis. The measures obtained on the U.S. Navy divers were compared with anthropometric data available for the male aviation populations.

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INTRODUCTION

Background

In the past ten years there have been tremendous advances made in the technology of diving. New equipment and deep diving systems have been built. These systems have greatly extended the depth and duration of man's sojourns into the sea. Diving technology has been developing along two separate but parallel lines. The understanding of the biophysiological aspects of diving has proceeded down one track, while the design and fabrication of suits and equipment has moved rapidly down the other.

The operational diver who has been taking the outputs from these two parallel efforts has been doing an outstanding job. He has had to integrate these outputs and come up with a workable diving system for the field. In the past the operational diver could exercise a great deal of freedom in making a system work. As the environmental stresses have increased with the deeper depths, however, the acceptable tolerances have been greatly reduced. These reduced tolerances necessitate that the design of future diving systems integrate the man with the system. By taking the man into consideration at the design stage rather than at the site of the operation the Navy will, in a great measure, reduce the chances of system failure and improve the cost effectiveness of the design.

One of the first steps in designing man into a system involves the defining and describing of the portion of the population with which you are dealing. If U.S. Navy divers are unique, then an effort should be made to provide a separate body of information on them which can be used by the design engineer.

Because of the tremendous physical effort required in deep sea diving one might suspect that the physical or anthropometric measurements of divers might be different than the general population. A preliminary survey of divers done in 1971 verified this as being so and recommended that a comprehensive study of diver anthropometrics be undertaken (1).

Purpose:

As recommended in Experimental Diving Unit report 7-71 this study was undertaken to provide a comprehensive

body of anthropometric data on the U.S. Navy diving population. This information if properly used, should facilitate the economic design of useful, comfortable diving equipment.

In addition to the descriptive statistics provided in this report an attempt was made to determine the minimum number of measures which must be made in order to adequately describe an equivalent sample.

Finally, each of the anthropometric measures obtained on the sample of navy divers was tested against the aviation population for which so much anthropometric data is available.

METHOD

Data Source:

One hundred (100) divers at the Naval School, Diving and Salvage, and the Experimental Diving Unit were studied. These men were classified in one of three categories: diver first class, HeO₂ diving officer students, or diver first class students.

Fifty-nine (59) different measures were obtained on each subject. Of these measures 54 are actual anthropometric measurements that were made on all 100 subjects. All these measurements were made following the procedures discussed in the International Biological Program Handbook No. 9. All the measurements were made by the same individual in an effort to reduce the measurement error. Siber Precision Anthropological instruments were used throughout this study (2). A detailed description of each anthropometric parameter measured is given in Appendix A.

In addition two pulmonary function measurements were acquired for the 41 divers from the Experimental Diving Unit. These measurements were collected in connection with another study and are included here because they were obtained on the same diver population used for the anthropometric study. The forced vital capacity and FEV₁ pulmonary function measures were obtained using a Collins 13.5 Liter respirometer. The last three measures (Specific Gravity, Percent Body Fat, and Body Surface Area) included in this report were derived using the following formulae:

	Reference Number
$\text{Sp. Gr.} = .22 \left(\frac{H^{0.725}}{W^{0.3} \times 1000} \right) + .75$	(3)
$\% \text{ Body Fat} = \left[\left(\frac{5.548}{\text{Sp. Gr.}} \right) - 5.044 \right] \times 100$	(4)
$\text{Body Sur. Area (M}^2\text{)} = 71.84 \left(H^{0.725} \times W^{0.425} \right)$	(5)

Height = cm

Weight = kg

These three measures were calculated for all 100 subjects.

Data Analysis

All the data gathered were analyzed on an IBM 360/30 computer. Five different analyses were conducted; general descriptive statistics, generated normal distribution percentages, an intercorrelations matrix, a factor analysis, and a Stepwise Multiple Regression Analysis. In phase I of this analysis the general descriptive statistics obtained included the mean, standard deviation, range, skewness, kurtosis, and a frequency histogram for each variable. Based upon the statistics obtained in phase I, smooth percentage distributions were generated in phase II of the analysis. These percentages are based upon a normal distribution and should be disregarded for those samples showing a significant level of skewness or kurtosis.

Phase III of the analysis involved the calculation of the intercorrelations among the 59 measured and derived variables. These correlations are presented in matrix form. The fourth phase of the analysis involved an attempt to reduce the number of needed variables to some manageable level. A principal component factor analysis with a varimax rotation was performed. Finally in Phase 5 a stepwise multiple regression analysis was performed using two different assumptions. First, the best predictors, i.e. the variables correlated highest with the eleven derived factors, were

selected. These 11 selected variables (one for each identified factor) were used to predict each of the 57 anthropometric variables. Three prediction equations are given for each anthropometric variable. The first equation includes the single best predictor, the second equation, the best two predictors, and the third equation, the best three predictors.

The second regression analysis was performed with the 11 most common measurements (one for each identified factor). These 11 selected variables were used to produce three predictive equations for each of the 57 anthropometric variables just as was described above. Along with each of the regression equations the standard error of the estimate and the multiple correlation are given.

In the final phase of the analysis the data for navy divers were compared with the data for the military aviation population using a student's t Test (6,7).

RESULTS

General descriptive statistics, including the mean, standard deviation, range, skewness, kurtosis, and a frequency histogram together with a generated normal distribution table of percentiles are presented in Appendix B. The smooth percentage distributions should be disregarded for those variables showing a significant level of skewness or kurtosis.

The intercorrelations among the 59 measured and derived variables are shown in a matrix in Appendix C. The correlations for variables 55 and 56 are based upon a sub sample of 41 divers at the Experimental Diving Unit. All of the other correlations are based upon the complete sample of 100.

A principle component factor analysis was conducted to reduce the number of variables required in future studies of this type. Twelve factors were found, 11 of which were easily identified. They are summarized in Table 1. The factor loading for each variable after varimax rotation, represents the correlation between the theoretical factor and the various anthropometric measures. The variables included within each factor are those that had loadings of .50 or greater.

The results of the regression analysis are given in Appendix D. The formulae provided should be helpful in

predicting the full range of anthropometric measures when the actual measures taken are confined to the factors identified above.

Fifty-four anthropometric measures were actually made on all 100 subjects. Thirty-seven of these measures were compared with the data from the military aviation population. The statistical results of this comparison are shown in Table 2. The results of these tests tend to indicate that the U.S. Navy diving population is significantly different from the general aviation population. The use of aviation anthropometric data in the design of diving equipment and systems will lead to inappropriate design specifications.

Articulated profile manikins based on these findings for the 5th, 50th and 95th percentiles were made to assist in engineering future diving systems. The Scale used is 1"=1'. They are assembled in Appendix E.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are noted in comparing divers and aviators. Divers are heavier but slightly shorter than aviators. Divers have a smaller chest, although the circumference was not significantly different. Divers' hands are narrower and their heads are smaller. Divers have heavier bone structure and more subcutaneous fat.

Diver anthropometrics are essential to diver comfort and sound economics of deep diving systems. For these reasons, the following recommendations are made:

- 1) Dynamic anthropometric measurements should be obtained on fully suited divers. The diver's breathing apparatus is essential for life support and should be included in the anthropometric measures.

- 2) The Navy Experimental Diving Unit be designated as the principal investigating activity, and proper funds approved for these studies.

TABLE 1

ANTHROPOMETRIC FACTORS RESULTING FROM
A PRINCIPLE COMPONENT FACTOR ANALYSIS

	Factor #1	Bulk.	Factor Loading
*	1.	Weight	.85
	8.	Bi-iliocrystal Diameter	.51
	9.	Transverse Ches	.64
	10.	Antero-Posterior Diameter Chest.	.72
¢	11.	Chest Circumference	.87
	12.	Abdominal Circumference	.79
#	13.	Thigh Circumference	.87
	41.	Neck Circumference	.68
**	42.	Upper Arm Circumference (Relaxed)	.92
	43.	Upper Arm Circumference (Contracted)	.88
	44.	Forearm Circumference	.79
	45.	Wrist Circumference	.57
	46.	Calf Circumference	.69
	47.	Triceps Skinfold	.59
	48.	Subscapular Skinfold	.69
	49.	Mid Axillary Skinfold	.64
	53.	Abdominal Skinfold	.71
	57.	Specific Gravity	-.93
	58.	% Total Body Fat	.94
	59.	Body Surface Area	.69
	Factor #2	Long Bones	
*¢	2.	Weight	-.91
#	3.	Suprasternal Height	-.92
**	4.	Anterior Superior Iliac Spine Height	-.94
	5.	Tibiale Height	-.68
	6.	Lower Leg Length	-.67
	17.	Buttock-Knee Length	-.82
	18.	Total Arm Length	-.88
	19.	Upper Arm Length	-.75
	20.	Forearm Length	-.76
	39.	Foot Length	-.65
	59.	Body Surface Area	-.61

TABLE 1 (cont.)

	Factor #3	Head Morphology	Factor Loading
¢	24.	Head Length	-.74
#	37.	Head Weight	-.76
*,**	40.	Head Circumference	-.80
	Factor #4	Lean Distribution	
*	48.	Subscapular Skinfold	.50
**	50.	Chest (Juxta-Nipple) Skinfold	.79
#	51.	Biceps Skinfold	.77
¢	52.	Forearm Skinfold	.63
	54.	Suprailiac Skinfold	.59
	Factor #5	Head/Face Breadth	
¢*	25.	Head Breadth	.60
#	26.	Bizygomatic Diameter	.72
	33.	Minimum Frontal Diameter	.57
**	34.	Bigonial Diameter	.72
	Factor #6	Branchial Arch I	
#*	29.	Nose Breadth	-.76
**	35.	Mouth Width	-.78
	Factor #7	Skeletal Bulk	
	14.	Ankle Circumference	.51
**	22.	Wrist Breadth	.73
#	23.	Hand Breadth	.60
¢	38.	Ankle Breadth	.58
*	45.	Wrist Circumference	.57
	Factor #8	Nose Size	
**	27.	Nasion-Gnathion	-.71
*#	28.	Nose Height	-.59

TABLE 1 (cont.)

		Factor
		<u>Loading</u>
Factor #9	Lip Thickness	
36.	Lip Thickness	.85
Factor #10	Ear Size	
#	30. Ear Length	-.70
**	*31. Ear Breadth	-.73
Factor #11	Leg Length	
**	* 5. Tibiale Height	.57
#	6. Lower Leg Length	.56
Factor #12	Misc.	
	7. Biacromal Diameter	.51
	16. Bicondylar Femur	.50
	32. Upper Face Height	.58

* = Most Common Variable
 ** = Best Predictor
 # = 2nd Best Predictor
 ¢ = 3rd Best Predictor

TABLE 2

A Statistical Comparison of Diver Anthropometric Data
With Available Aviator Data

Variable	t-value	Variable	t-value
1	3.300	28	-1.075¢
2	-2.303#	29	-4.754
3	-2.554**	30	-2.692*
4		31	7.033
5		32	
6		33	6.387
7	10.44	34	-19.462
8		35	1.466¢
9	-11.194	36	-1.049¢
10	-13.074	37	14.985
11	-1.445¢	38	-2.686*
12	5.482	39	-0.707¢
13	1.314¢	40	-3.028*
14	4.307	41	1.617¢
15	-3.687	42	
16		43	3.175*
17	-5.994	44	
18		45	2.911*
19		46	1.300¢
20		47	-.796¢
21		48	3.690
22		49	
23	-13.505	50	9.811
24	-1.068¢	51	
25	-2.679*	52	
26	-3.133*	53	4.138
27	-2.840*	54	

¢ N.S.

P < .025

** P < .01

* P < .005

P < .001

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APPENDIX A

1) Weight

Should be done preferably in the nude or with the subject clad in lightweight shorts.

✓ 2) Height (Stature)

The subject should stand on a horizontal platform with his heels together, stretching upward to the fullest extent, aided by gentle traction by the measurer on the mastoid processes. The subject's back should be as straight as possible, which may be achieved by rounding or relaxing the shoulders and manipulating the posture. The marked Frankfort plane must be horizontal. The horizontal arm of the anthropometer is brought down on the subject's head. The subject's heels must be watched to make sure they do not leave the ground.

3) Suprasternal Height (Fig. 1)

With the subject standing in the same posture as for stature, the height of the marked suprasternal point is taken.

✓ 4) Anterior-Superior Iliac Spine Height (Fig. 2)

With the subject standing in the same posture as for stature, the anterior superior iliac spine is located

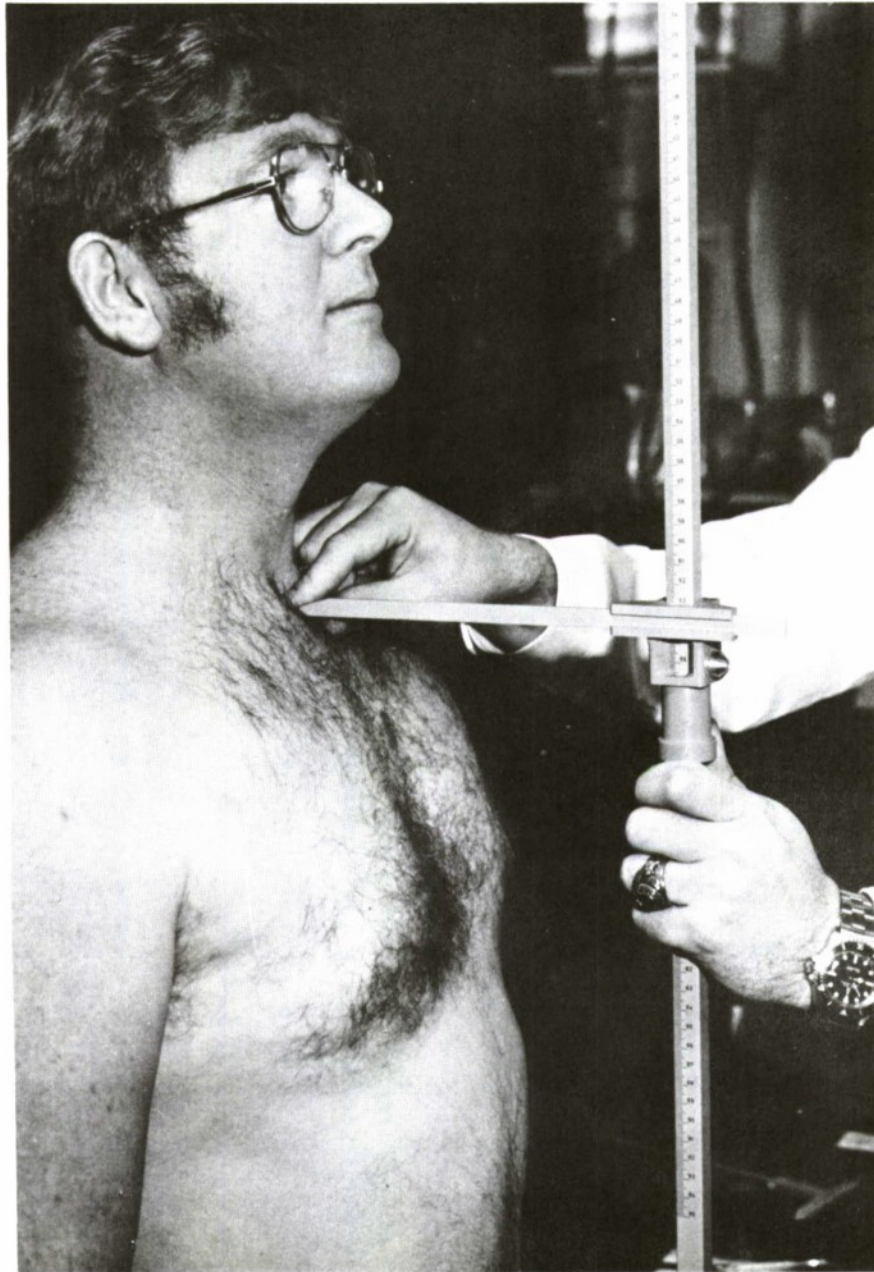


FIG. 1 SUPRASTERNAL HEIGHT

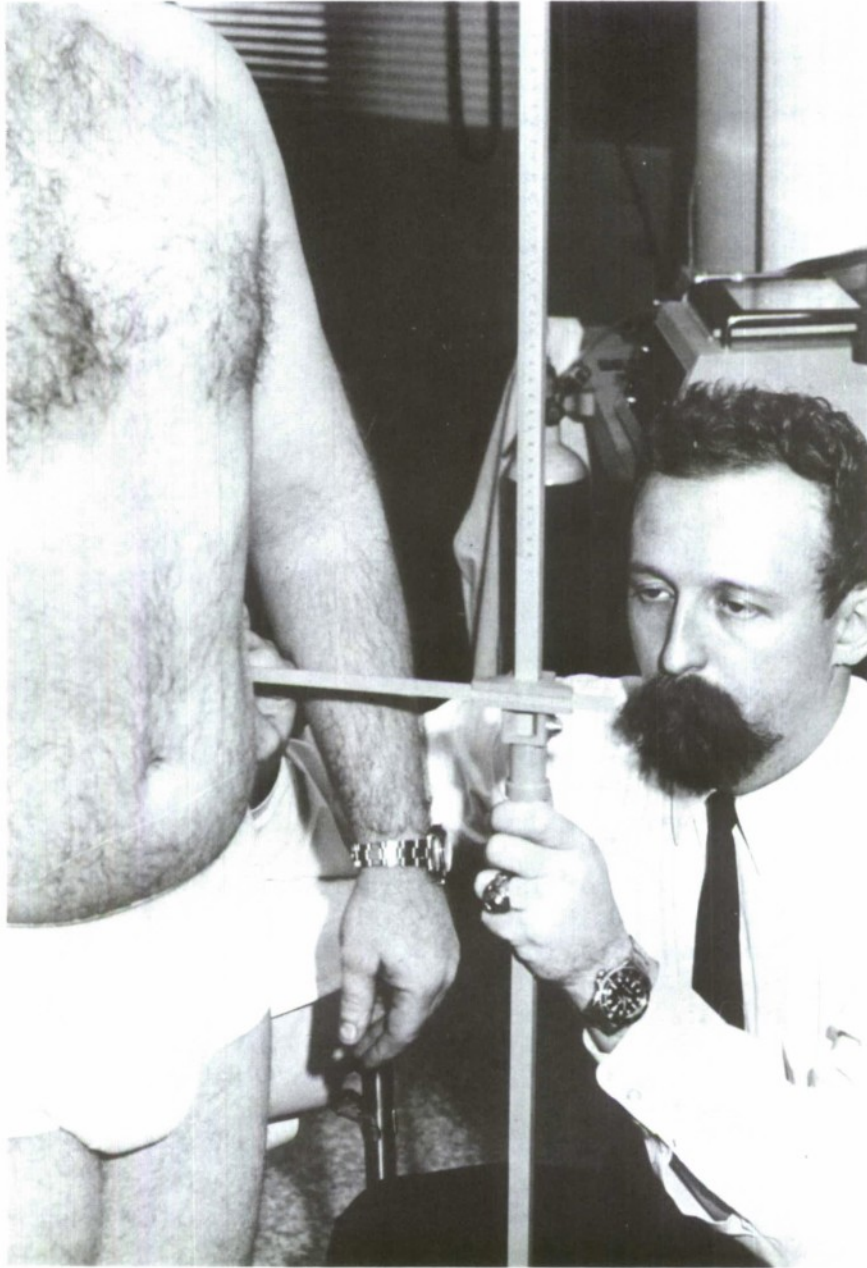


FIG. 2 ANTERIOR SUPERIOR ILIAC SPINE HEIGHT

by palpating with the 3rd finger of the hand holding the horizontal arm of the anthropometer which is then applied to the point.

✓ 5) Tibiale Height (Fig. 3)

The subject stands on a flat surface. The anthropometer is held vertically and the distance measured from the standing surface to tibiale.

(The upper point of the inner border of the medial tibial conoyle)

6) Lower Leg Length

With the subject standing in the same position as for Tibiale Height, the vertical distance from the malleolus to Tibiale is measured.

7) Biacromial Diameter (Fig. 4)

To give maximum shoulder width, the subject stands with his shoulder relaxed to the point of slumping forward. Standing behind the subject, the measurer feels for the outside edge of the acromial process of the shoulder blade which can be felt as a ridge just above the shoulder joint. He then places the edge of one arm of the anthropometer along the external border of one acromial process and brings the other arm of the anthropometer inwards until its edges rests on the opposite acromial external border.



FIG. 3 TIBIALE HEIGHT

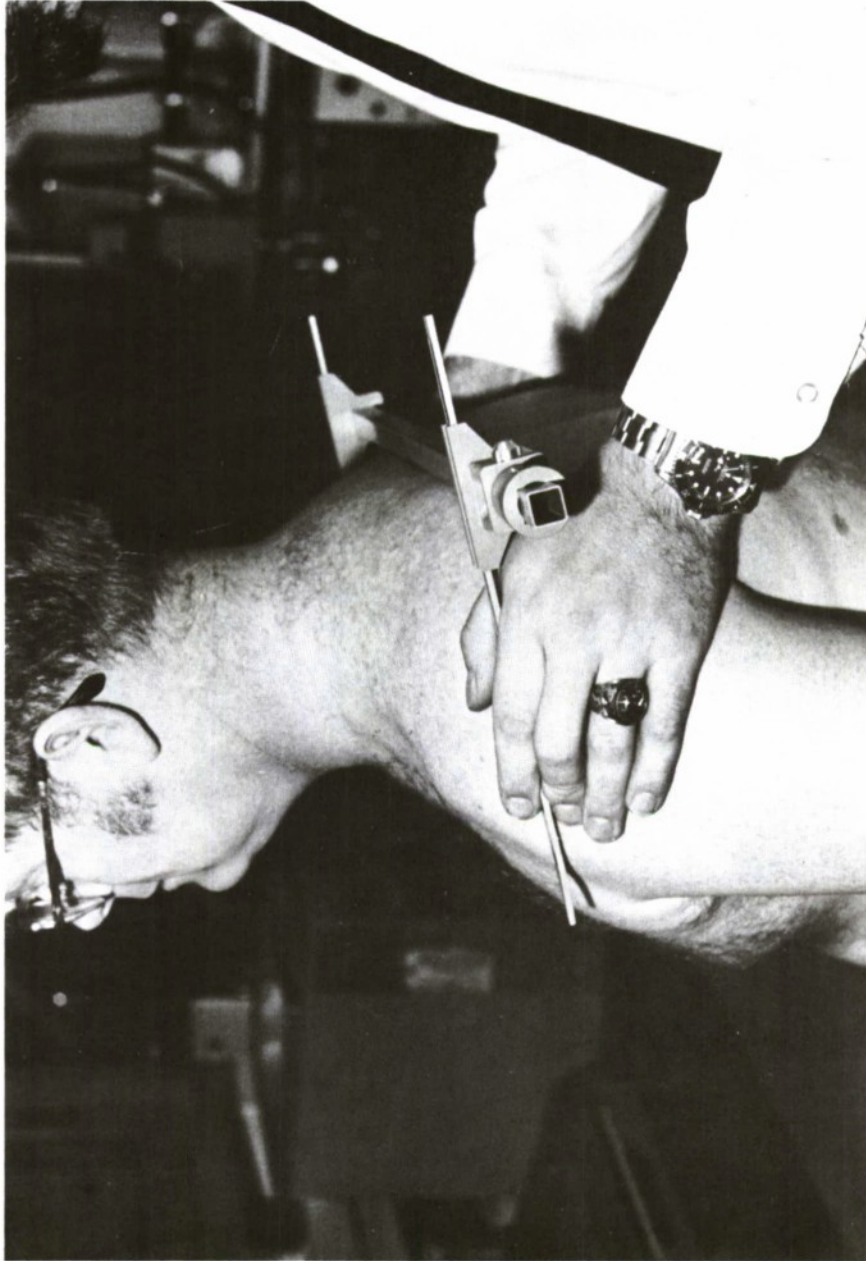


FIG. 4 BIACROMIAL DIAMETER

✓ 8) Bi-iliocrystal Diameter (Fig. 5)

The subject stands with his heels together and the anthropometric arms are brought into contact with the iliac crests at the place which gives the maximum diameter. Strong pressure is applied to the anthropometer to push aside any fat covering the bone.

✓ 9) Transverse Chest

The subject stands and the measurement is taken at the end of normal expiration at the marked levels of the 3rd and 4th Sternebrae. The arms of the anthropometer rest on the external surfaces of the nearest rib on each side. Light pressure is exerted.

✓ 10) Antero-Posterior Chest (Fig. 6)

The subject stands and the measurement is made at the marked union of the 3rd and 4th Sternebrae in a plane perpendicular to the body axis. The posterior point should be on the tip of a vertebral spine.

✓ 11) Chest Circumference (Fig. 7)

Measured at the marked union of the 3rd and 4th sternebrae, at right angles to the axis of the body, at the end of normal expiration.

12) Abdominal Circumference

The subject stands erect with his abdomen relaxed. The tape is held behind the subject with one edge in the horizontal plane through the center of the umbilicus. The tape is then wrapped carefully around the subject's torso, using it as an aid in marking the horizontal plane on the sides and back.



FIG. 5 BI-ILIOCRISTAL DIAMETER

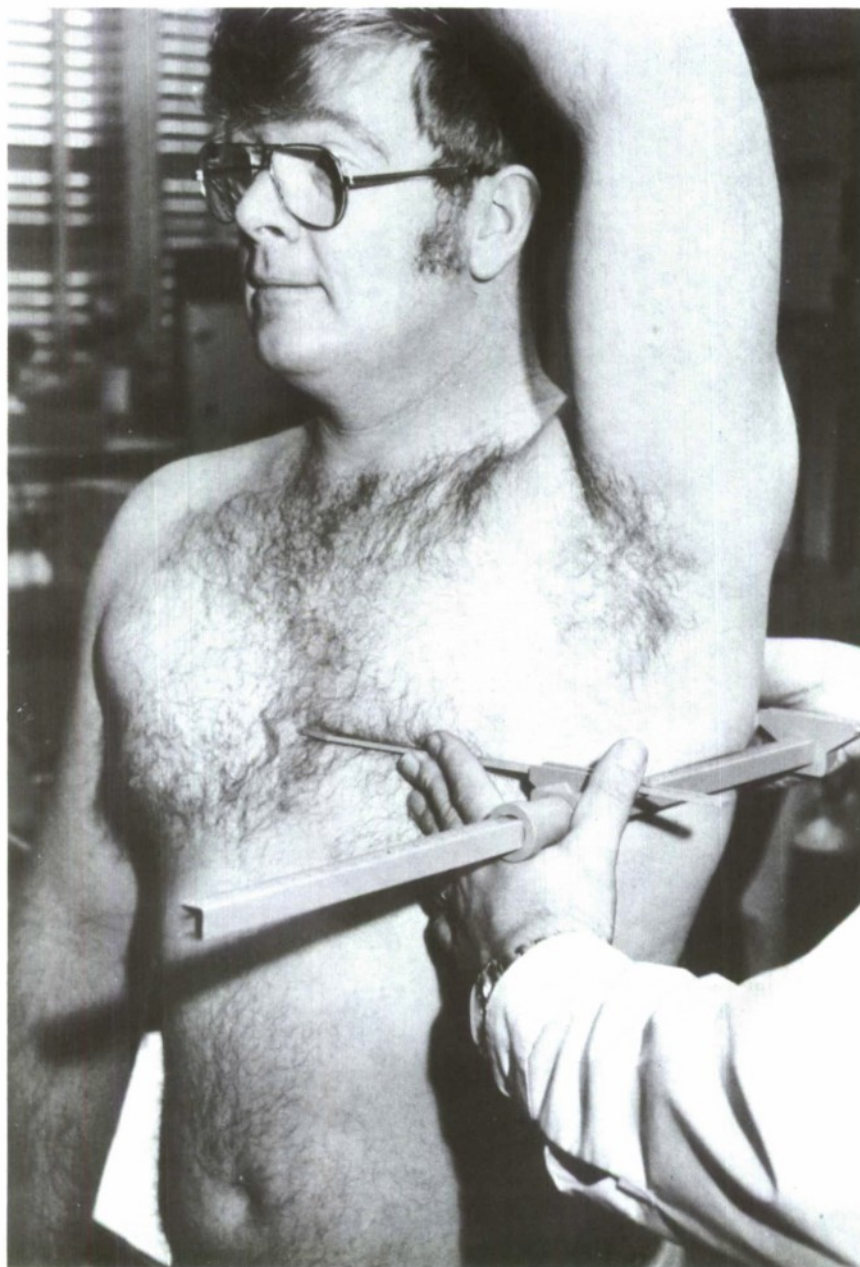


FIG. 6 ANTERIOR-POSTERIOR CHEST DIAMETER



FIG. 7 CHEST CIRCUMFERENCE

13) Thigh Circumference

The subject stands with his feet slightly apart and his weight evenly distributed on both feet; the tape is placed round the thigh horizontally with its upper edge just under the gluteal fold.

14) Ankle Circumference

With the subject standing, the tape is held slightly above the projections of the ankle bones and the minimum circumference of the leg is measured.

15) Sitting Height (Fig. 8)

Measured with the subjects back stretched up straight as he sits on a table top with his feet hanging down unsupported over the edge; the backs of his knees should be directly above the edge of the table. Gentle traction is applied under the chin; the muscles of the thighs and buttocks should be uncontracted. The head is held in the Frankfort plane, and the anthropometer is held vertically, in contact with the back at the sacral and interscapular regions.

16) Bicondylar Femur (Fig. 9)

The subject sits on a table with his knees bent to a right angle, and the width across the outermost parts of the lower end of the femur is measured. Pressure is exerted to compress the tissues.

17) Buttock-Knee Length (Fig. 10)

The subject sits erect, his feet resting on a surface so that the knees are bent at about right angles. The

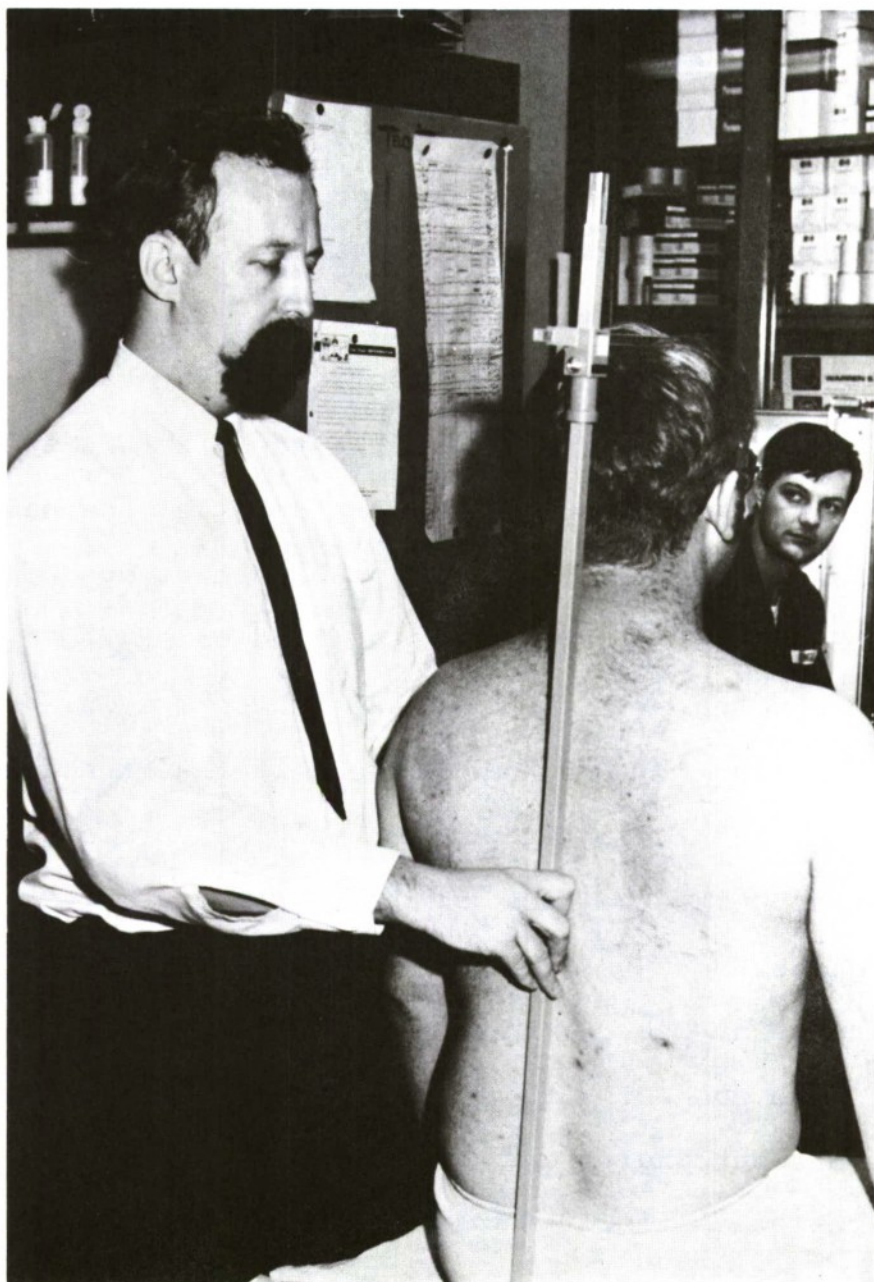


FIG. 8 SITTING HEIGHT



FIG. 9 BICONDYLAR FEMUR



FIG. 10 BUTTOCK-KNEE LENGTH

horizontal distance from the rear most point of the left buttock to the front of the knee cap is measured.

✓18) Total Arm Length (Fig. 11)

With the subject's arm and hand fully extended by his side the tip of one arm of the anthropometer is placed at the inferior border of the acromial process. The distance to the tip of the longest finger is measured.

✓19) Upper Arm Length

The external superior border of the head of the radius is marked, and the length from this mark to the inferior border of the acromion process is taken.

✓20) Forearm Length (Fig. 12)

Measured from the marked radial head to the tip of the lateral styloid.

✓21) Bicondylar Humerus

The subject's elbow is bent to a right angle and the width across the outermost parts of the lower end of the humerus is taken. Pressure is exerted to compress the tissues.

✓22) Wrist Breadth

Breadth is taken across the styloid processes (oblique to the long axis of the arm) with pressure to compress the tissues.



FIG. 11 TOTAL ARM LENGTH



FIG. 12 FOREARM LENGTH

23) Hand Breadth (Fig. 13)

Breadth is taken across the distal tips of the metacarpals II-V (which may be oblique); the fingers should be together and in line with the forearm.

24) Head Length (Fig. 14)

The maximum length in the sagittal plane from glabella (the most salient point between the eyebrows) to the most salient point on the occiput. Pressure is exerted to compress the tissues.

25) Head Breadth (Fig. 15)

The maximum breadth in the transverse plane, wherever it occurs. Pressure is exerted to compress the tissues.

26) Bizygomatic Diameter (Fig. 16)

The maximum diameter between the zygomatic arches. Pressure is exerted to compress the tissues.

27) Morphological Face Height (Nasion-Gnathion) (Fig. 17)

With one arm of the caliper held horizontally at the marked Nasion, the other arm of the caliper is hooked under the tip of the chin. The teeth should be fully occluded.

28) Nose Height (Fig. 18)

One arm of the caliper is held horizontally at the marked Nasion, while the other arm is brought down to reach the union of the upper lip with the nasal septum.

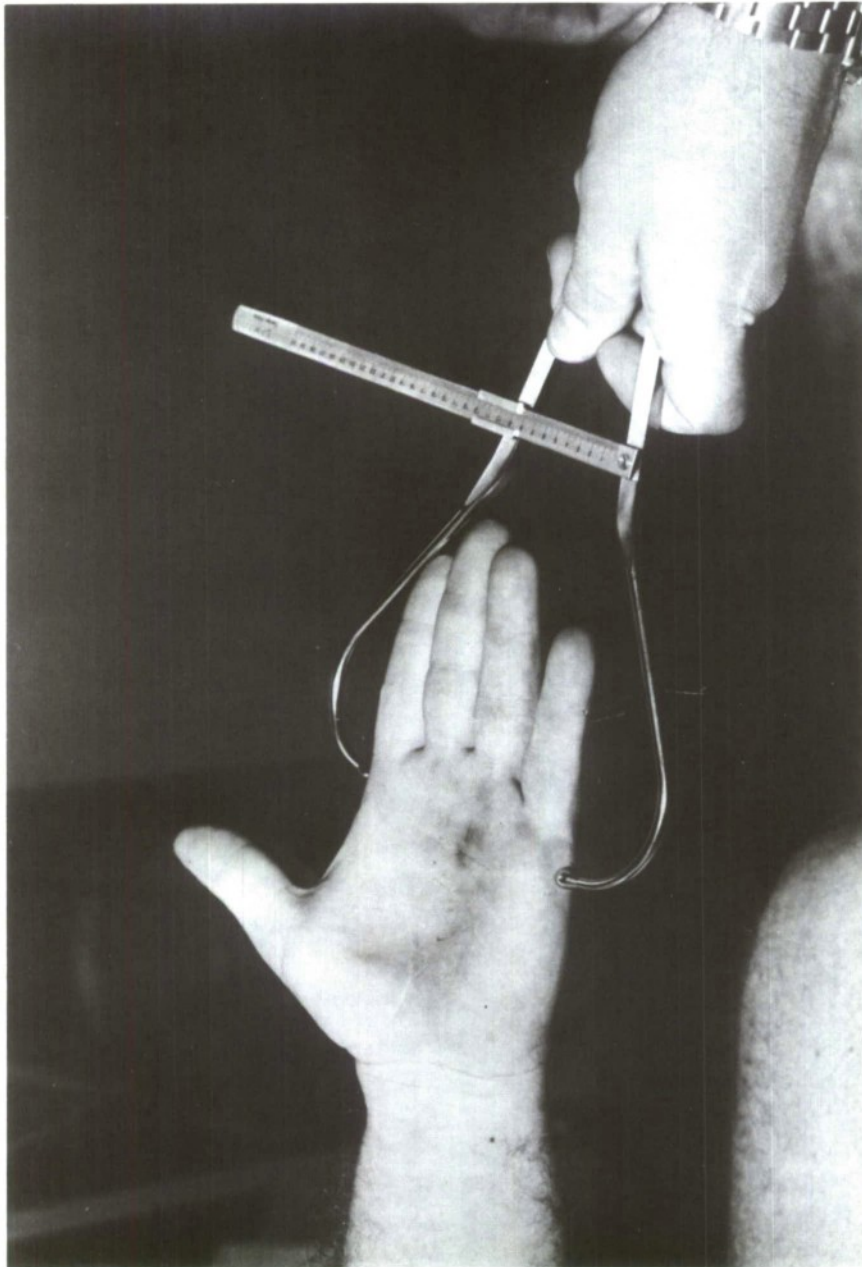


FIG. 13 HAND BREADTH



FIG. 14 HEAD LENGTH



FIG. 15 HEAD BREADTH



FIG. 16 BIZYGOMATIC DIAMETER

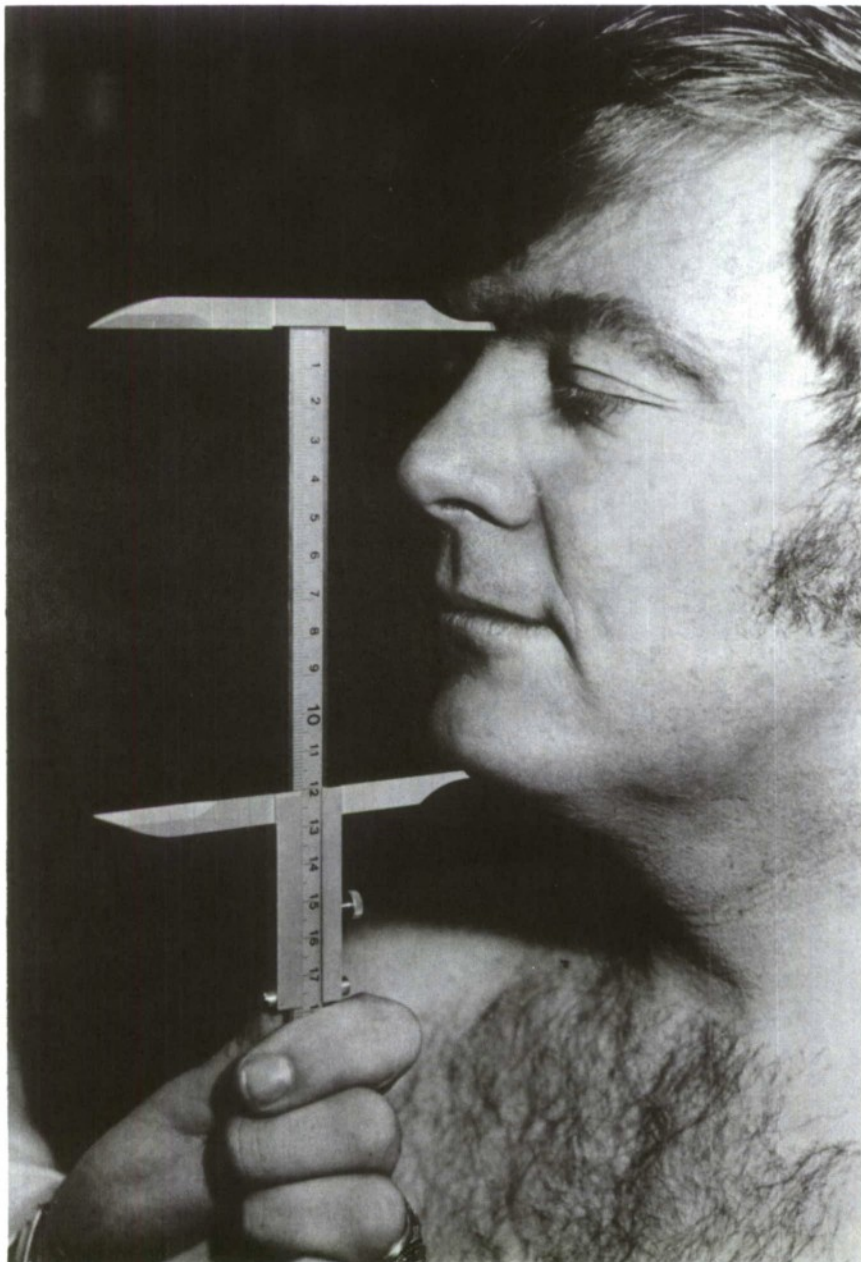


FIG. 17 NASION—GNATHION



FIG. 18 NOSE HEIGHT

29) Nose Breadth (Fig. 19)

The caliper is held horizontally and its arms brought into contact with the outside of the nares, but without pressure.

30) Ear Length (Fig. 20)

The maximum length of the subject's ear along its long axis is measured.

31) Ear Breadth (Fig. 21)

With the fixed arm of the sliding caliper parallel to the long axis of the ear, the maximum breadth of the ear is measured.

32) Upper Face Height (Fig. 22)

The subject stands comfortably with his head in the Frankfort plane. The anthropometer is then used to measure the vertical distance from the top of the head to the point of contact between the upper and lower lips in the midsagittal plane.

33) Minimum Frontal Diameter (Fig. 23)

Holding the spreading caliper near its tips, the minimum horizontal diameter across the temporal crests at their point of greatest indentation is measured. Care must be taken that the measurement is made on the crests and not on the temporal muscles.

34) Bigonial Diameter (Fig. 24)

The maximum diameter between the angles of the mandibles on their external surfaces. Pressure is exerted to compress the tissues.

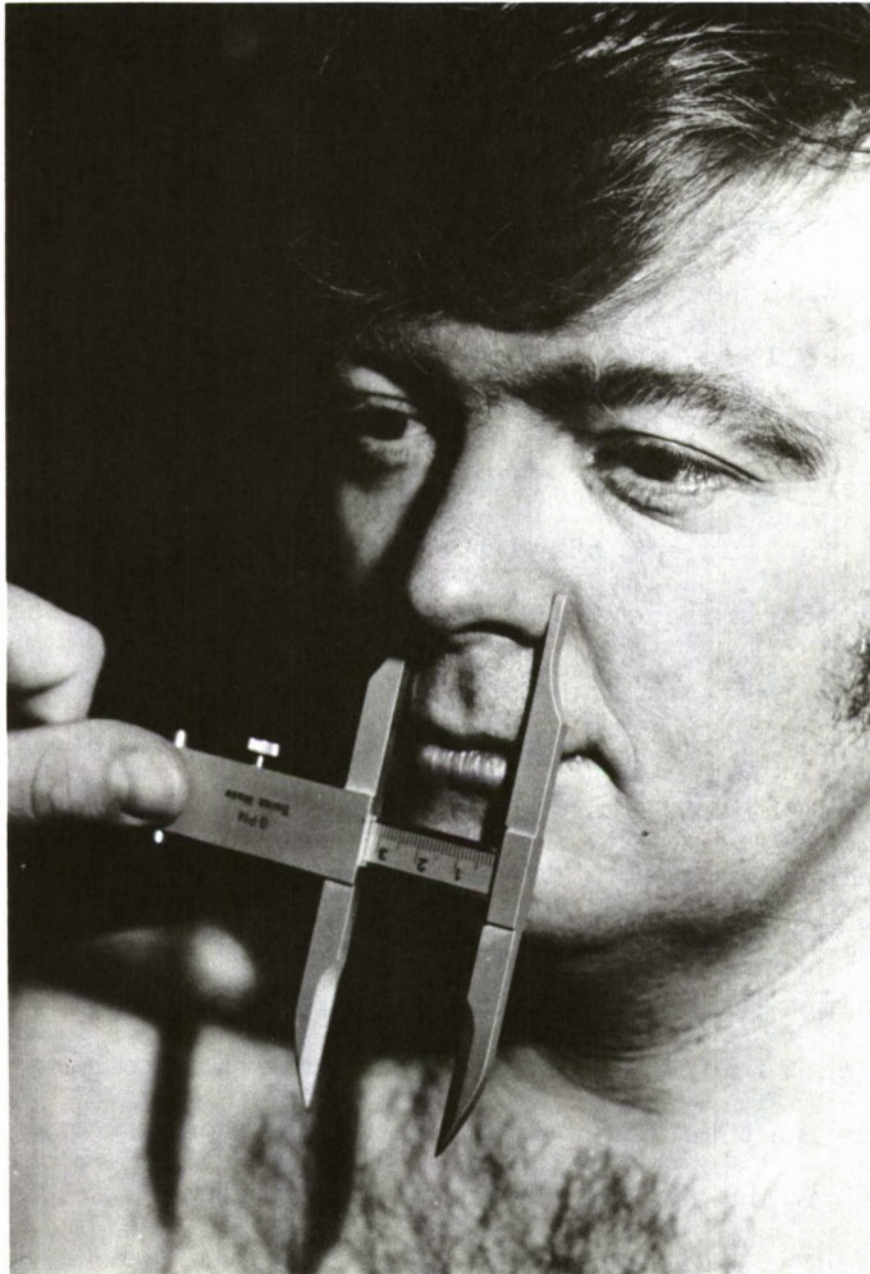


FIG. 19 NOSE BREADTH

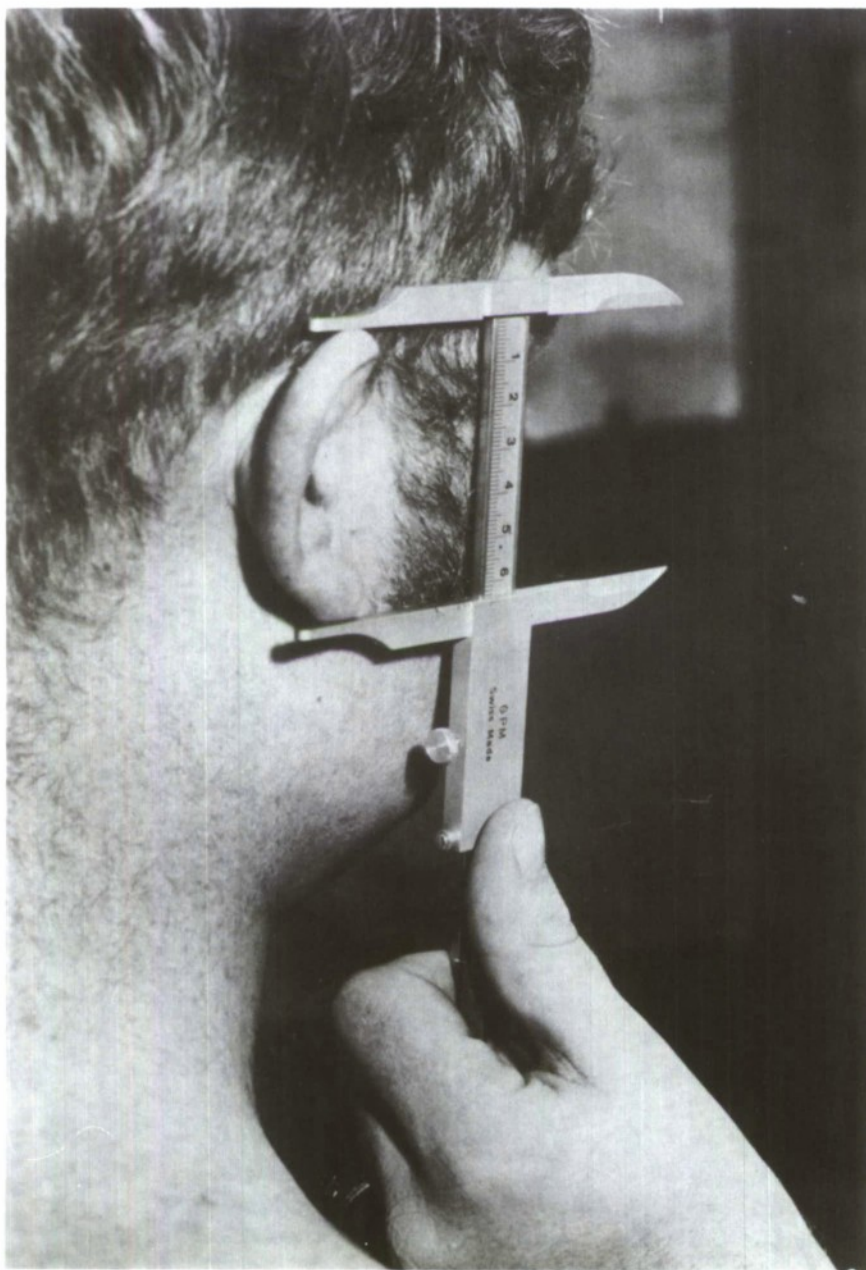


FIG. 20 EAR HEIGHT



FIG. 21 EAR BREADTH



FIG. 22 UPPER FACE HEIGHT



FIG. 23 MINIMUM FRONTAL DIAMETER

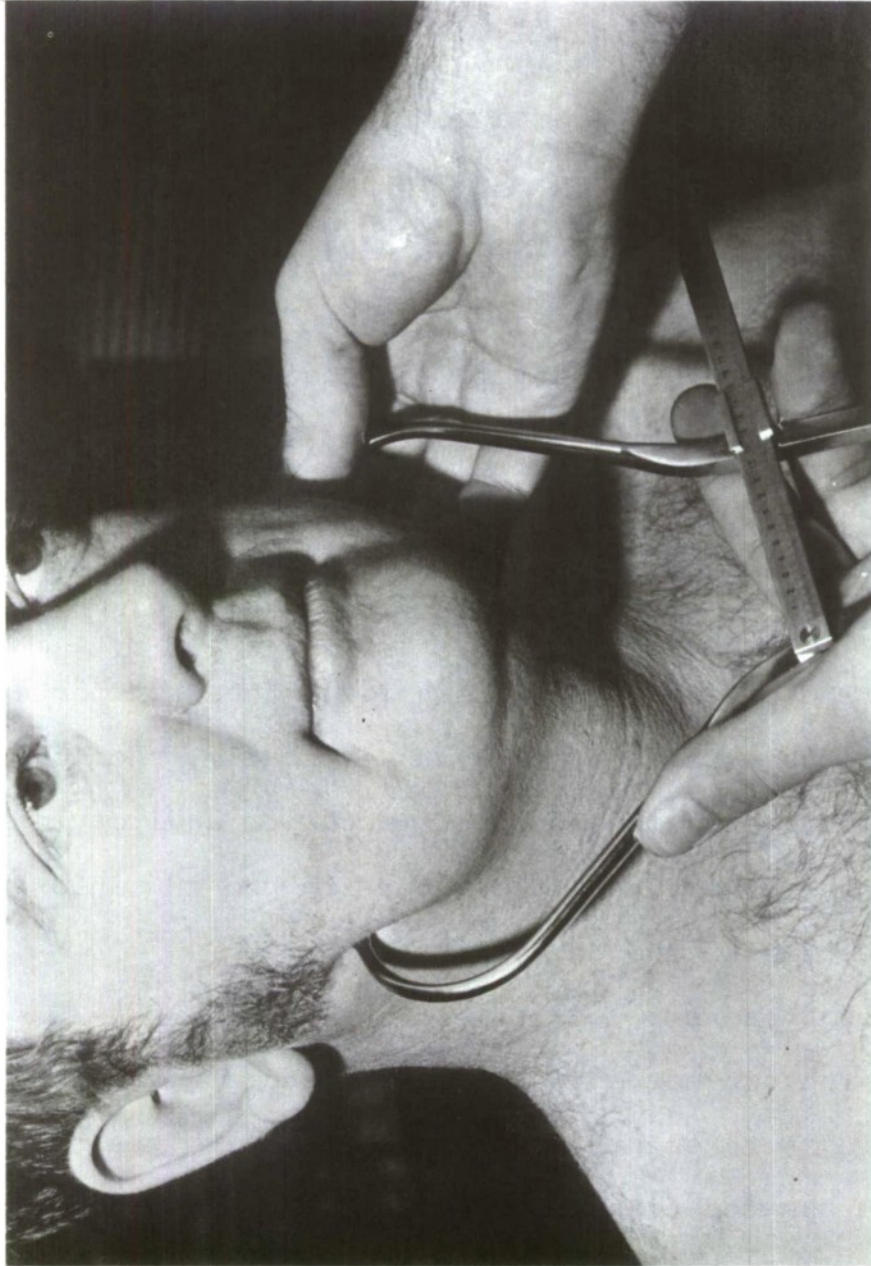


FIG. 24 BIGONIAL DIAMETER

35) Mouth Width (Fig. 25)

With the lips closed and the mouth holding normal position, the distance between the corners of the mouth is measured.

36) Lip Thickness (Fig. 26)

The caliper is held vertically and put flat on the mouth without pressure. The upper arm of the caliper is brought to the medial point of a tangent between the highest points of the upper lip, while the lower arm of the caliper is brought to the medial point of a tangent between the lowest points of the lower lip. The subject should keep his mouth closed without contracting his lips.

✓ 37) Head Height (Fig. 27)

The subject's head is held in the Frankfort plane. With the anthropometer held vertically, the lower arm is positioned into the left exterior auditory meatus of the subject, and the upper arm brought into contact with the top of the head.

✓ 38) Ankle Breadth

The subject sits on a table and the breadth of the ankle is taken across the malleoli with pressure to compress the tissues.

✓ 39) Foot Length (Fig. 28)

The subject sits and rests his left foot lightly along the horizontal bar of the anthropometer with the center of the heel against the arm of the



FIG. 25 MOUTH WIDTH

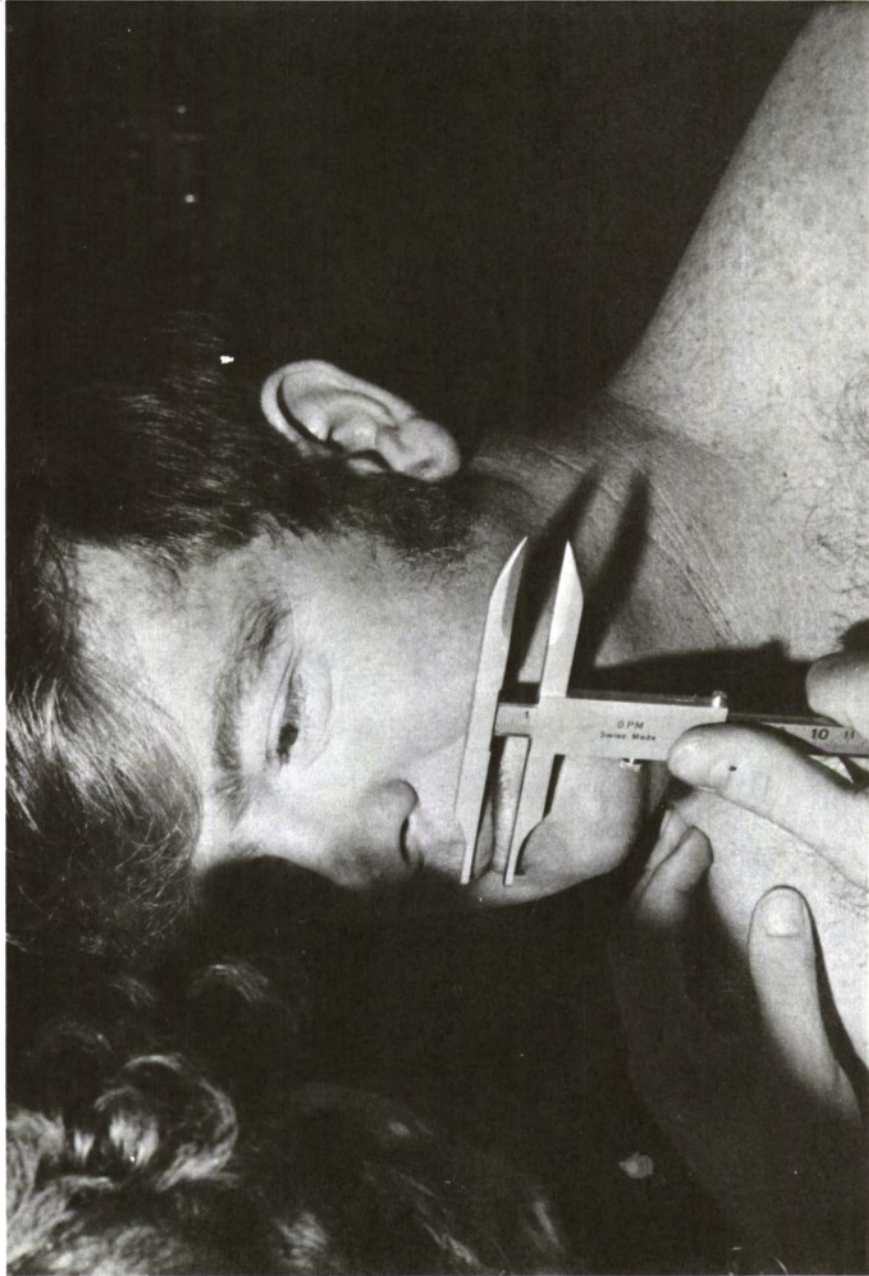


FIG. 26 LIP THICKNESS

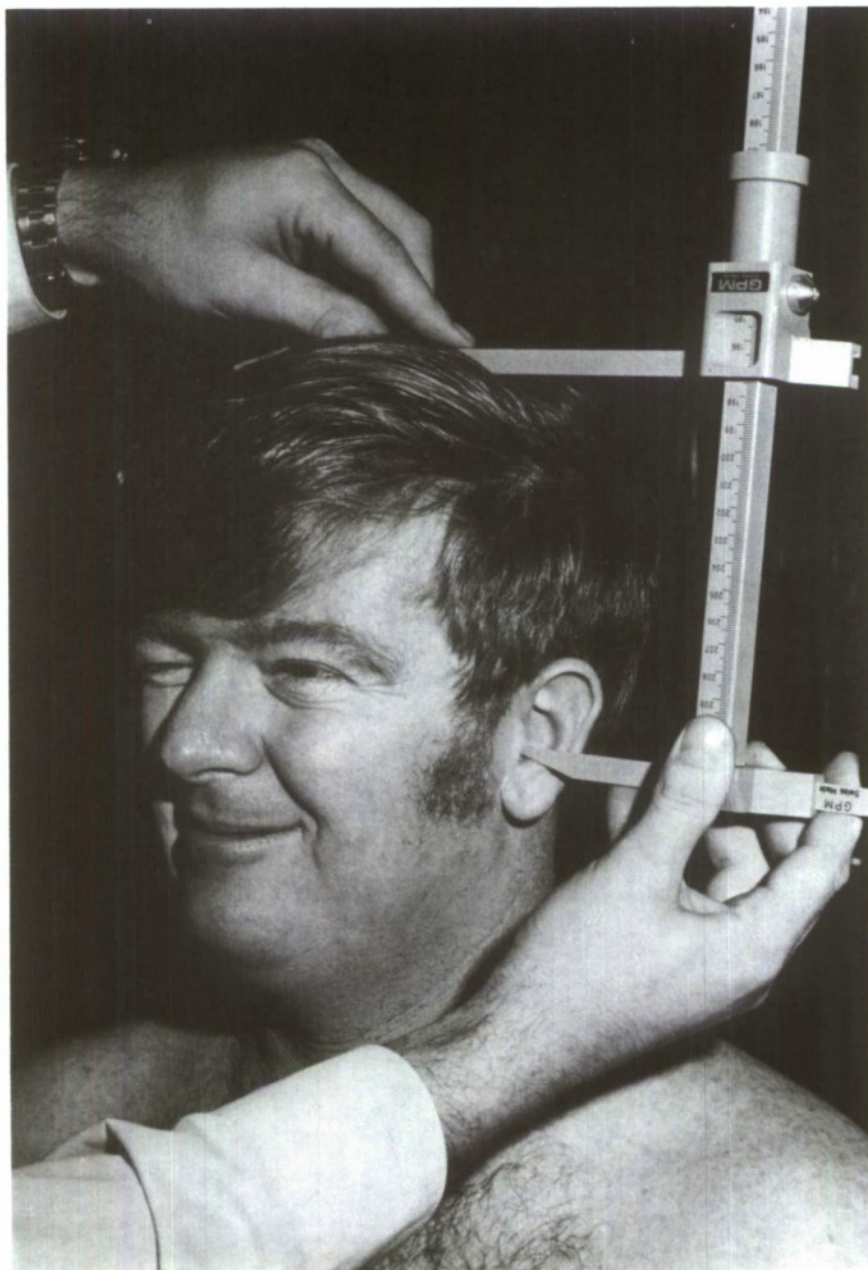


FIG. 27 HEAD HEIGHT



FIG. 28 FOOT LENGTH

anthropometer. The second arm of the anthropometer is brought into contact with the end of the longest toe. If the toe-nail protrudes, it must be cut.

40) Head Circumference (Fig. 29)

With the subject seated, the maximum circumference of the head is measured with the tape passing above (but not including) the brow ridges.

41) Neck Circumference (Fig. 30)

Taken in the horizontal plane just below the level of the thyroid cartilage.

42) Upper Arm Relaxed Circumference (Fig. 31)

The subject's arm hangs relaxed, just away from his side and the circumference is taken horizontally at the marked level.

43) Upper Arm Contracted Circumference (Fig. 32)

Taken horizontally at the maximum circumference over the contracted biceps with the elbow flexed.

44) Forearm Circumference (Fig. 33)

The measurement is taken just distal to the elbow joint, with the whole extremity relaxed.

45) Wrist Circumference (Fig. 34)

With the tape passing just proximal to the styloid process of the ulna, the minimum circumference of the wrist is measured.



FIG. 29 HEAD CIRCUMFERENCE



FIG. 30 NECK CIRCUMFERENCE



FIG. 31 UPPER ARM CIRCUMFERENCE (RELAXED)



FIG. 32 UPPER ARM CIRCUMFERENCE (CONTRACTED)



FIG. 33 FOREARM CIRCUMFERENCE



FIG. 34 WRIST CIRCUMFERENCE

✓46) Calf Circumference

The subject sits on a table with his leg hanging freely. The maximum circumference is taken horizontally.

47) Triceps Skinfold (Fig. 35)

The skinfold is picked up at the back of the arm midway between the tip of the acromial process of the scapula and the tip of the elbow with the forearm flexed to 90°. The measurement is made with the arm pendant.

48) Subscapular Skinfold (Fig. 36)

The skinfold is picked up under the angle of the left scapula. The fold should be vertical or pointing slight downwards, and outwards.

49) Mid Axillary Skinfold

The Skinfold is picked up on the Mid-axillary line at the level of the xiphoid process.

50) Chest Skinfold (Juxta-Nipple) Fig. 37)

The skinfold is picked up just lateral to the nipple at the level of the xiphoid process.

51) Biceps Skinfold (Fig. 38)

The skinfold is picked up on the front of the arm directly above the center of the cubital fossa at the same level as that for the triceps skinfold.

52) Forearm Skinfold (Fig. 39)

The skinfold is picked up on the lateral aspect of the forearm at the mid-point of the radius.

53) Abdomen Skinfold (Fig. 40)

The skinfold is picked up at the level of the umbilicus and 2.5 cm to the left of it.

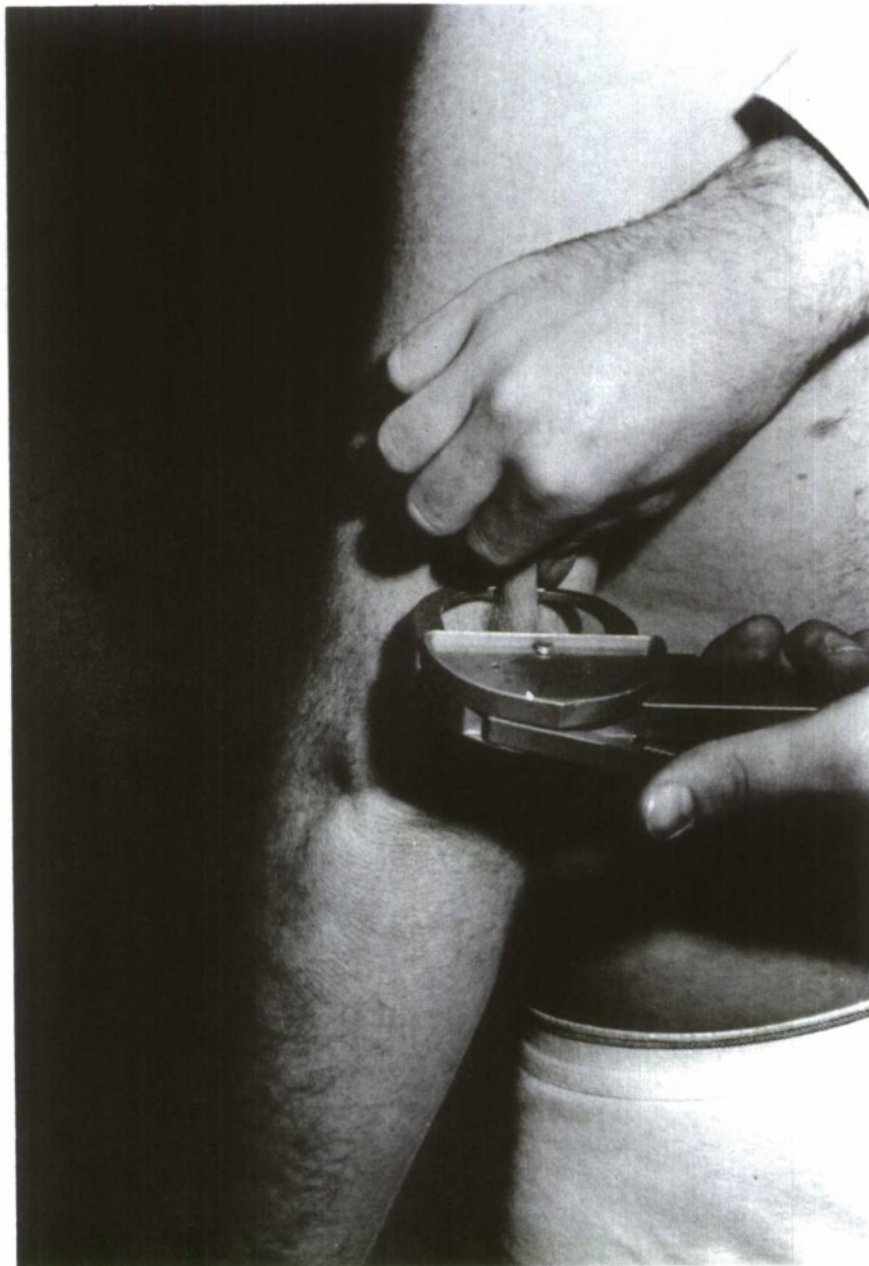


FIG. 35 TRICEPS SKINFOLD



FIG. 36 SUBSCAPULAR SKINFOLD



FIG. 37 CHEST SKINFOLD (JUXTA-NIPPLE)

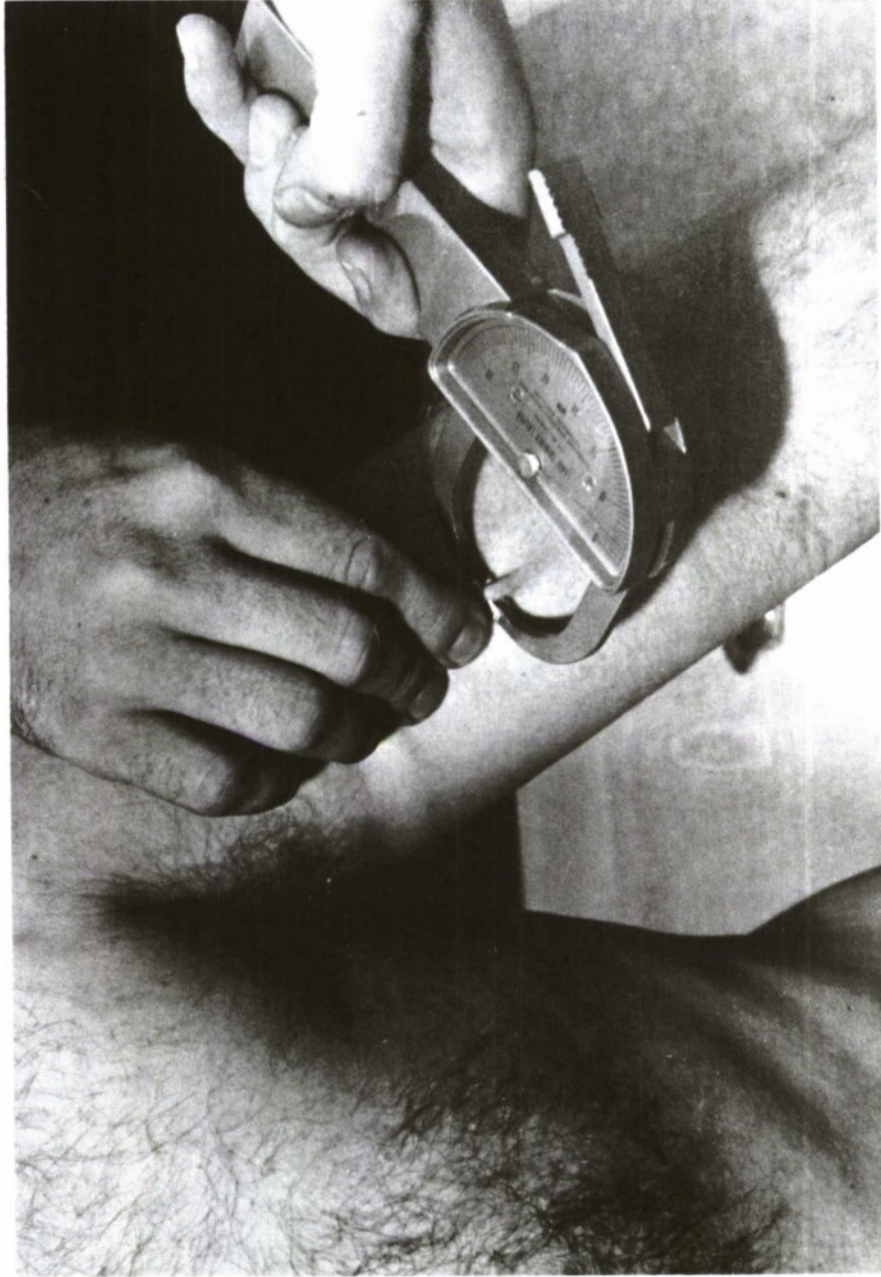


FIG. 38 BICEPS SKINFOLD

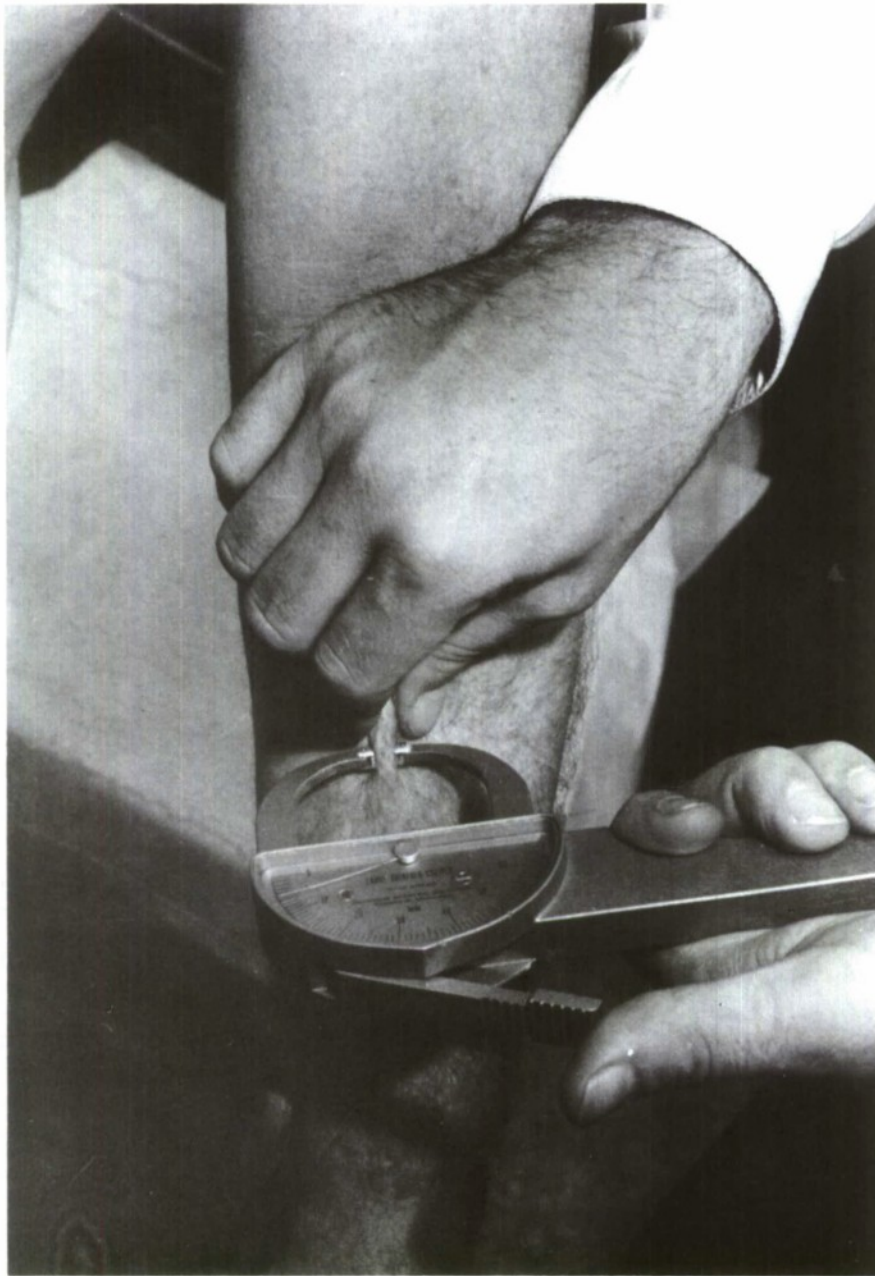


FIG. 39 FOREARM SKINFOLD



FIG. 40 ABDOMEN SKINFOLD

54) Suprailiac Skinfold (Fig. 41)

The skinfold is picked up 1 cm above and 2 cm medial to the anterior superior iliac spine.

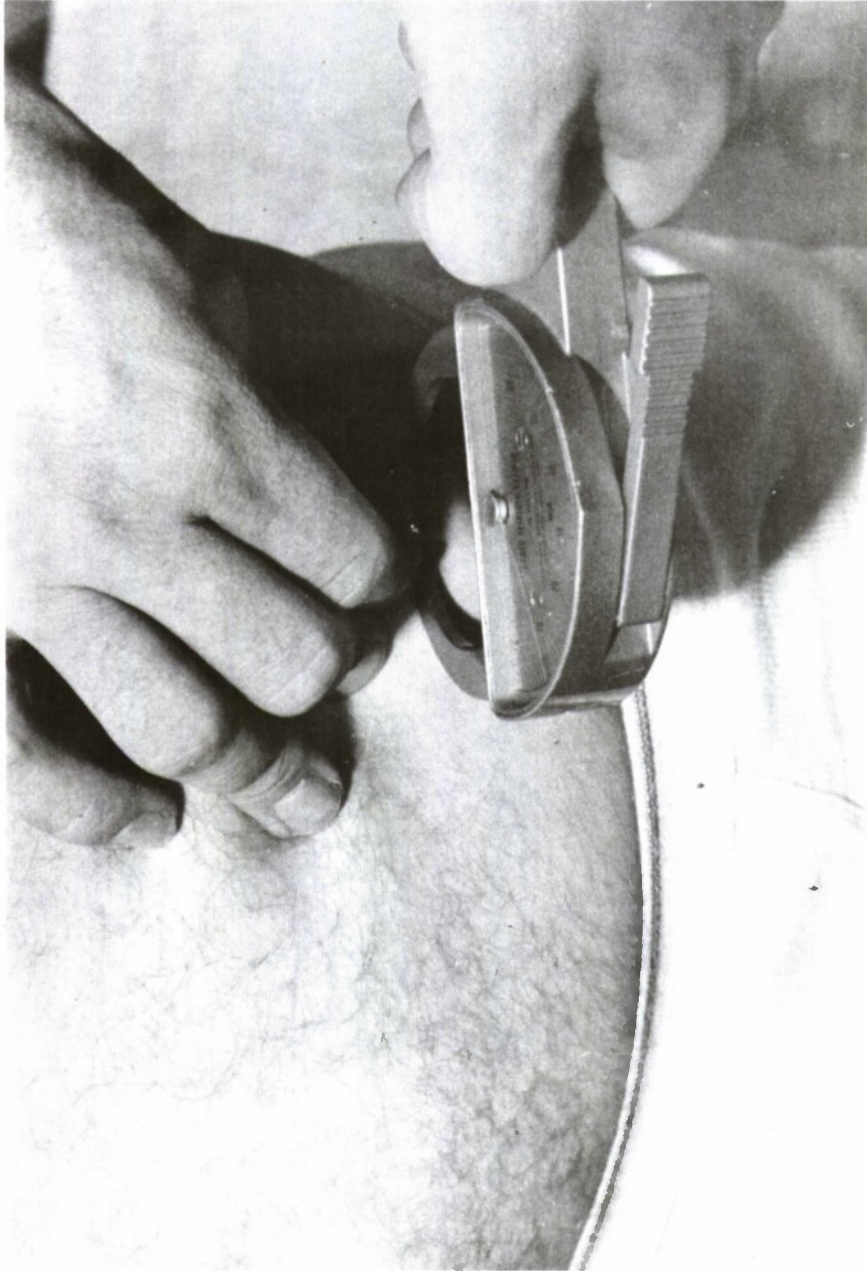


FIG. 41 SUPRAILAIAC SKINFOLD

APPENDIX B

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	MISDIGRA4	K=	0.420
55.000 - 60.000	57.500	0.	0.0	0.0	3.3		
60.000 - 65.000	62.500	5.	5.000	5.000	5.000	((((((
65.000 - 70.000	67.500	7.	7.000	12.000	12.000	((((((
70.000 - 75.000	72.500	21.	21.000	33.000	33.000	((((((
75.000 - 80.000	77.500	18.	18.000	51.000	51.000	((((((
80.000 - 85.000	82.500	15.	15.000	66.000	66.000	((((((
85.000 - 90.000	87.500	12.	12.000	78.000	78.000	((((((
90.000 - 95.000	92.500	9.	9.000	87.000	87.000	((((((
95.000 - 100.000	97.500	6.	6.000	93.000	93.000	((((((
100.000 - 105.000	102.500	4.	4.000	97.000	97.000	((((((
105.000 - 110.000	107.500	2.	2.000	99.000	99.000	((((((
110.000 - 115.000	112.500	0.	0.0	99.000	99.000		
115.000 - 120.000	117.500	0.	0.0	99.000	99.000		
120.000 - 125.000	122.500	1.	1.000	100.000	100.000	((((((

(1) WEIGHT			
MEAN	STANDARD DEVIATION	RANGE	
81.52	11.24	60.38 - 120.08 (KG)	
179.72	24.77	133.11 - 264.73 (LB)	
SKEWNESS		KURTOSIS	
0.66		0.44	
KILLOGRAMS	PERCENTILES	POUNDS	
55.38	1ST	122.10	
58.44	2ND	128.84	
60.38	3RD	133.12	
63.04	5TH	138.97	
67.11	10TH	147.96	
69.88	15TH	154.06	
72.06	20TH	158.86	
73.95	25TH	163.02	
75.63	30TH	166.74	
77.19	35TH	170.18	
78.68	40TH	173.45	
80.10	45TH	176.60	
81.52	50TH	179.72	
82.94	55TH	182.84	
84.36	60TH	185.99	
85.85	65TH	189.26	
87.41	70TH	192.70	
89.09	75TH	196.42	
90.98	80TH	200.58	
93.16	85TH	205.39	
95.93	90TH	211.48	
100.01	95TH	220.47	
102.66	97TH	226.32	
104.60	98TH	230.61	
107.66	99TH	237.34	

SC23E INTERVA. MID POINT FREQUENCY PERCENT CUMULATIVE HISTOGRAM X= 0.660

PERCENT

150.000 - 155.000	152.500	0.	0.0	2.2	(
155.000 - 160.000	157.500	1.	1.000	1.000	(
160.000 - 165.000	162.500	2.	2.000	3.000	(
165.000 - 170.000	167.500	11.	11.000	14.000	(
170.000 - 175.000	172.500	33.	33.000	47.000	(
175.000 - 180.000	177.500	28.	28.000	75.000	(
180.000 - 185.000	182.500	15.	15.000	90.000	(
185.000 - 190.000	187.500	10.	10.000	100.000	(

(2) HEIGHT
MEAN STANDARD DEVIATION RANGE
176.22 2.98 155.70 - 188.50 (CM)
69.38 2.36 61.30 - 74.21 (IN)
SKEWNESS KURTOSIS
-0.13 0.32

CENTIMETERS	PERCENTILES	INCHES
162.30	1ST	63.90
163.93	2ND	64.54
164.96	3RD	64.95
166.38	5TH	65.50
168.55	10TH	66.36
170.02	15TH	66.94
171.18	20TH	67.39
172.18	25TH	67.79
173.08	30TH	68.14
173.91	35TH	68.47
174.70	40TH	68.78
175.46	45TH	69.08
176.22	50TH	69.38
176.97	55TH	69.67
177.73	60TH	69.97
178.52	65TH	70.28
179.35	70TH	70.61
180.25	75TH	70.96
181.25	80TH	71.36
182.51	85TH	71.82
183.88	90TH	72.40
186.06	95TH	73.25
187.47	97TH	73.81
188.50	98TH	74.21
190.13	99TH	74.85

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT
125.000 - 127.000	126.000	0.	0.0	0.0
127.000 - 129.000	128.000	1.	1.000	1.000
129.000 - 131.000	130.000	0.	0.0	1.000
131.000 - 133.000	132.000	0.	0.0	1.000
133.000 - 135.000	134.000	1.	1.000	2.000
135.000 - 137.000	136.000	6.	6.000	8.000
137.000 - 139.000	138.000	11.	11.000	19.000
139.000 - 141.000	140.000	16.	16.000	35.000
141.000 - 143.000	142.000	13.	13.000	48.000
143.000 - 145.000	144.000	13.	13.000	61.000
145.000 - 147.000	146.000	15.	15.000	76.000
147.000 - 149.000	148.000	6.	6.000	82.000
149.000 - 151.000	150.000	5.	6.000	88.000
151.000 - 153.000	152.000	7.	7.000	95.000
153.000 - 155.000	154.000	3.	3.000	98.000
155.000 - 157.000	156.000	2.	2.000	100.000

(31) SUPRASTERNAL HEIGHT		STANDARD DEVIATION		RANGE	
MEAN	143.87	5.35	128.00 - 155.70 (CM)		
	56.64	2.11	50.39 - 61.30 (IN)		
SKEWNESS		KURTOSIS			
0.11		-0.24			
CENTIMETERS	PERCENTILES	INCHES			
131.43	1ST	51.74	52.32		
132.88	2ND	52.68	53.18		
133.81	3RD	53.18	53.94		
135.07	5TH	54.46	54.87		
137.01	10TH	55.22	55.54		
138.33	15TH	55.83	56.11		
139.36	20TH	56.37	56.64		
140.26	25TH	56.91	57.17		
141.06	30TH	57.45	57.74		
141.81	35TH	58.06	58.41		
142.51	40TH	58.82	59.34		
143.19	45TH	60.10	60.60		
143.87	50TH	60.96	61.54		
144.54	55TH				
145.22	60TH				
145.92	65TH				
146.67	70TH				
147.47	75TH				
148.37	80TH				
149.41	85TH				
150.72	90TH				
152.66	95TH				
153.92	97TH				
154.85	98TH				
156.30	99TH				

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT 0.720

85.000 - 90.000	87.500	0.	0.0	0.0	0.0
90.000 - 95.000	92.500	1.	1.000	1.000	1.000
95.000 - 100.000	97.500	3.	3.000	4.000	4.000
100.000 - 105.000	102.500	36.	36.000	38.000	38.000
105.000 - 110.000	107.500	36.	36.000	74.000	74.000
110.000 - 115.000	112.500	19.	19.000	93.000	93.000
115.000 - 120.000	117.500	7.	7.000	100.000	100.000

(4) ANTERIOR SUPERIOR ILLIAC SPINE HEIGHT

MEAN 107.11 STANDARD DEVIATION 4.90 RANGE 92.30 - 119.50 (CM)

42.17 SKEWNESS 0.19 KURTOSIS -0.17

CENTIMETERS	PERCENTILES	INCHES
95.71	1ST	37.68
97.05	2ND	38.21
97.89	3RD	38.54
99.05	5TH	39.00
100.83	10TH	39.70
102.04	15TH	40.17
102.99	20TH	40.55
103.81	25TH	40.87
104.54	30TH	41.16
105.23	35TH	41.43
105.87	40TH	41.68
106.50	45TH	41.93
107.11	50TH	42.17
107.73	55TH	42.41
108.35	60TH	42.66
109.00	65TH	42.91
109.68	70TH	43.18
110.42	75TH	43.47
111.24	80TH	43.80
112.19	85TH	44.17
113.40	90TH	44.64
115.18	95TH	45.34
116.33	97TH	45.80
117.18	98TH	46.13
118.51	99TH	46.66

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	$\Sigma = 0.420$
30.000 - 31.000	30.500	0.	0.00	2.2	
31.000 - 32.000	31.500	1.	1.000	1.22	
32.000 - 33.000	32.500	0.	0.0	1.22	
33.000 - 34.000	33.500	0.	0.0	1.000	
34.000 - 35.000	34.500	1.	1.000	2.22	
35.000 - 36.000	35.500	5.	5.000	7.22	
36.000 - 37.000	36.500	8.	8.000	15.22	
37.000 - 38.000	37.500	6.	6.000	21.22	
38.000 - 39.000	38.500	15.	15.000	36.22	
39.000 - 40.000	39.500	10.	10.000	46.22	
40.000 - 41.000	40.500	21.	21.000	67.22	
41.000 - 42.000	41.500	9.	9.000	76.22	
42.000 - 43.000	42.500	7.	7.000	83.22	
43.000 - 44.000	43.500	11.	11.000	94.22	
44.000 - 45.000	44.500	3.	3.000	97.22	
45.000 - 46.000	45.500	1.	1.000	98.22	
46.000 - 47.000	46.500	2.	2.000	100.22	

MEAN 40.12
 STANDARD DEVIATION 2.77
 LOWER LEG LENGTH RANGE 31.90 - 46.50 (CM)
 15.80 SKEWNESS 1.09
 KURTOSIS 12.56 - 18.31 (IN)

CENTIMETERS	PERCENTILES	INCHES
33.69	1ST	13.26
34.44	2ND	13.56
34.92	3RD	13.75
35.57	5TH	14.00
36.57	10TH	14.40
37.26	15TH	14.67
37.79	20TH	14.88
38.26	25TH	15.06
38.67	30TH	15.22
39.06	35TH	15.38
39.42	40TH	15.52
39.77	45TH	15.66
40.12	50TH	15.80
40.47	55TH	15.93
40.82	60TH	16.07
41.18	65TH	16.21
41.57	70TH	16.37
41.98	75TH	16.53
42.45	80TH	16.71
42.98	85TH	16.92
43.67	90TH	17.19
44.67	95TH	17.59
45.32	97TH	17.84
45.80	98TH	18.03
46.55	99TH	18.33

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\bar{x} = 0.490$

35.000 -	36.000	35.500	0.	0.0	0.0	(((
36.000 -	37.000	36.500	2.	2.000	2.000	(((
37.000 -	38.000	37.500	1.	1.000	3.000	((
38.000 -	39.000	38.500	3.	3.000	6.000	(((
39.000 -	40.000	39.500	9.	9.000	15.000	(((
40.000 -	41.000	40.500	16.	16.000	29.000	(((
41.000 -	42.000	41.500	19.	19.000	48.000	(((
42.000 -	43.000	42.500	24.	24.000	72.000	(((
43.000 -	44.000	43.500	13.	13.000	85.000	(((
44.000 -	45.000	44.500	9.	9.000	94.000	(((
45.000 -	46.000	45.500	4.	4.000	98.000	(((
46.000 -	47.000	46.500	2.	2.000	100.000	(((

(7) BIACROMIAL DIAMETER
 MEAN 42.05 STANDARD DEVIATION 1.93 RANGE 36.60 - 46.40 (CM)
 16.55 SKEWNESS 0.76 KURTOSIS 14.41 - 18.27 (IN)
 -0.16

CENTIMETERS	PERCENTILES	INCHES
37.56	1ST	14.79
38.09	2ND	14.99
38.42	3RD	15.13
38.87	5TH	15.30
39.57	10TH	15.58
40.05	15TH	15.77
40.42	20TH	15.91
40.75	25TH	16.04
41.04	30TH	16.16
41.30	35TH	16.26
41.56	40TH	16.36
41.80	45TH	16.46
42.05	50TH	16.55
42.29	55TH	16.65
42.53	60TH	16.75
42.79	65TH	16.85
43.06	70TH	16.95
43.35	75TH	17.07
43.67	80TH	17.19
44.04	85TH	17.34
44.52	90TH	17.53
45.22	95TH	17.80
45.67	97TH	17.98
46.01	98TH	18.11
46.53	99TH	18.32

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	$\Sigma x = 0.420$
24.000 - 25.000	24.500	0.	0.0	0.0	0.0
25.000 - 26.000	25.500	1.	1.000	1.000	1.000
26.000 - 27.000	26.500	15.	15.000	16.000	16.000
27.000 - 28.000	27.500	20.	20.000	36.000	36.000
28.000 - 29.000	28.500	21.	21.000	57.000	57.000
29.000 - 30.000	29.500	21.	21.000	78.000	78.000
30.000 - 31.000	30.500	15.	15.000	93.000	93.000
31.000 - 32.000	31.500	4.	4.000	97.000	97.000
32.000 - 33.000	32.500	1.	1.000	98.000	98.000
33.000 - 34.000	33.500	1.	1.000	99.000	99.000

(8) BI-ILLICRISTAL DIAMETER				
STANDARD DEVIATION		RANGE		
MEAN		1.57	26.00 -	33.50 (CM)
11.34	0.62		10.24 -	13.19 (IN)
SKEWNESS		KURTOSIS		
0.41		-0.33		
CENTIMETERS	PERCENTILES	INCHES		
25.15	1ST	9.90		
25.57	2ND	10.07		
25.85	3RD	10.18		
26.22	5TH	10.32		
26.79	10TH	10.55		
27.18	15TH	10.70		
27.48	20TH	10.82		
27.75	25TH	10.92		
27.98	30TH	11.02		
28.20	35TH	11.10		
28.41	40TH	11.18		
28.61	45TH	11.26		
28.81	50TH	11.34		
29.01	55TH	11.42		
29.21	60TH	11.50		
29.41	65TH	11.58		
29.63	70TH	11.67		
29.87	75TH	11.76		
30.13	80TH	11.86		
30.44	85TH	11.98		
30.82	90TH	12.14		
31.40	95TH	12.36		
31.77	97TH	12.51		
32.04	98TH	12.61		
32.47	99TH	12.78		

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	X = 0.790
24.000 - 26.000	25.000	0.	0.0	0.0	
26.000 - 28.000	27.000	9.	9.000	9.000	(((
28.000 - 30.000	29.000	36.	36.000	45.000	(((
30.000 - 32.000	31.000	39.	39.000	84.000	(((
32.000 - 34.000	33.000	14.	14.000	98.000	(((
34.000 - 36.000	35.000	3.	3.000	100.000	(((
36.000 - 38.000	37.000	1.	1.000	100.000	(((

[9] TRANSVERSE CHEST				
MEAN	STANDARD DEVIATION	RANGE		
30.61	1.81	27.00 - 36.50 (CM)		
12.05	0.71	10.63 - 14.37 (IN)		
SKEWNESS		KURTOSIS		
0.61		0.57		
CENTIMETERS	PERCENTILES	INCHES		
26.39	1ST	10.39		
26.89	2ND	10.59		
27.20	3RD	10.71		
27.63	5TH	10.88		
28.29	10TH	11.14		
28.74	15TH	11.31		
29.09	20TH	11.45		
29.39	25TH	11.57		
29.66	30TH	11.68		
29.92	35TH	11.78		
30.16	40TH	11.87		
30.39	45TH	11.96		
30.61	50TH	12.05		
30.84	55TH	12.14		
31.07	60TH	12.23		
31.31	65TH	12.33		
31.57	70TH	12.43		
31.84	75TH	12.53		
32.14	80TH	12.65		
32.49	85TH	12.79		
32.94	90TH	12.97		
33.60	95TH	13.23		
34.03	97TH	13.40		
34.34	98TH	13.52		
34.84	99TH	13.71		

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\sigma = 0.500$
17.000 - 18.000	17.500	0.	0.0	0.0	|||||	
18.000 - 19.000	18.500	5.	6.000	6.000	|||||	
19.000 - 20.000	19.500	11.	11.000	17.000	|||||	
20.000 - 21.000	20.500	20.	20.000	37.000	|||||	
21.000 - 22.000	21.500	25.	25.000	62.000	|||||	
22.000 - 23.000	22.500	18.	18.000	80.000	|||||	
23.000 - 24.000	23.500	13.	13.000	93.000	|||||	
24.000 - 25.000	24.500	6.	6.000	99.000	|||||	
25.000 - 26.000	25.500	1.	1.000	100.000	|||||	

(10) ANTERO-POSTERIOR CHEST				
MEAN	STANDARD DEVIATION	RANGE		
21.65	1.62	18.40 - 25.90 (CM)		
8.53	0.64	7.24 - 10.20 (IN)		
		KURTOSIS		
		-0.49		
CENTIMETERS	PERCENTILES	INCHES		
17.90	1ST	7.05		
18.24	2ND	7.22		
18.61	3RD	7.33		
19.00	5TH	7.48		
19.58	10TH	7.71		
19.98	15TH	7.87		
20.29	20TH	7.99		
20.57	25TH	8.10		
20.81	30TH	8.19		
21.03	35TH	8.28		
21.25	40TH	8.36		
21.45	45TH	8.45		
21.65	50TH	8.53		
21.86	55TH	8.61		
22.06	60TH	8.69		
22.28	65TH	8.77		
22.50	70TH	8.86		
22.74	75TH	8.95		
23.02	80TH	9.06		
23.33	85TH	9.18		
23.73	90TH	9.34		
24.31	95TH	9.57		
24.70	97TH	9.72		
24.97	98TH	9.83		
25.41	99TH	10.01		

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\bar{x} = 0.260$
0-1	0.5	1	100	100	1	
1-2	1.5	1	100	100	1	
2-3	2.5	1	100	100	1	
3-4	3.5	1	100	100	1	
4-5	4.5	1	100	100	1	
5-6	5.5	1	100	100	1	
6-7	6.5	1	100	100	1	
7-8	7.5	1	100	100	1	
8-9	8.5	1	100	100	1	
9-10	9.5	1	100	100	1	
10-11	10.5	1	100	100	1	
11-12	11.5	1	100	100	1	
12-13	12.5	1	100	100	1	
13-14	13.5	1	100	100	1	
14-15	14.5	1	100	100	1	
15-16	15.5	1	100	100	1	
16-17	16.5	1	100	100	1	
17-18	17.5	1	100	100	1	
18-19	18.5	1	100	100	1	
19-20	19.5	1	100	100	1	
20-21	20.5	1	100	100	1	
21-22	21.5	1	100	100	1	
22-23	22.5	1	100	100	1	
23-24	23.5	1	100	100	1	
24-25	24.5	1	100	100	1	
25-26	25.5	1	100	100	1	
26-27	26.5	1	100	100	1	
27-28	27.5	1	100	100	1	
28-29	28.5	1	100	100	1	
29-30	29.5	1	100	100	1	
30-31	30.5	1	100	100	1	
31-32	31.5	1	100	100	1	
32-33	32.5	1	100	100	1	
33-34	33.5	1	100	100	1	
34-35	34.5	1	100	100	1	
35-36	35.5	1	100	100	1	
36-37	36.5	1	100	100	1	
37-38	37.5	1	100	100	1	
38-39	38.5	1	100	100	1	
39-40	39.5	1	100	100	1	
40-41	40.5	1	100	100	1	
41-42	41.5	1	100	100	1	
42-43	42.5	1	100	100	1	
43-44	43.5	1	100	100	1	
44-45	44.5	1	100	100	1	
45-46	45.5	1	100	100	1	
46-47	46.5	1	100	100	1	
47-48	47.5	1	100	100	1	
48-49	48.5	1	100	100	1	
49-50	49.5	1	100	100	1	
50-51	50.5	1	100	100	1	
51-52	51.5	1	100	100	1	
52-53	52.5	1	100	100	1	
53-54	53.5	1	100	100	1	
54-55	54.5	1	100	100	1	
55-56	55.5	1	100	100	1	
56-57	56.5	1	100	100	1	
57-58	57.5	1	100	100	1	
58-59	58.5	1	100	100	1	
59-60	59.5	1	100	100	1	
60-61	60.5	1	100	100	1	
61-62	61.5	1	100	100	1	

70.000	-	72.000	71.000	9.	0.0	3.0	(((
72.000	-	74.000	73.000	1.	1.000	1.000	(((
74.000	-	76.000	75.000	0.	0.0	1.000	(((
76.000	-	78.000	77.000	5.	5.000	6.000	(((
78.000	-	80.000	79.000	3.	3.000	9.000	(((
80.000	-	82.000	81.000	8.	8.000	17.000	(((
82.000	-	84.000	83.000	9.	9.000	26.000	(((
84.000	-	86.000	85.000	11.	11.000	37.000	(((
86.000	-	88.000	87.000	12.	12.000	49.000	(((
88.000	-	90.000	89.000	7.	7.000	56.000	(((
90.000	-	92.000	91.000	8.	8.000	54.000	(((
92.000	-	94.000	93.000	10.	10.000	74.000	(((
94.000	-	96.000	95.000	5.	5.000	79.000	(((
96.000	-	98.000	97.000	9.	9.000	98.000	(((
98.000	-	100.000	99.000	3.	3.000	91.000	(((
100.000	-	102.000	101.000	1.	1.000	92.000	(((
102.000	-	104.000	103.000	1.	1.000	93.000	(((
104.000	-	106.000	105.000	2.	2.000	95.000	(((
106.000	-	108.000	107.000	2.	2.000	97.000	(((
108.000	-	110.000	109.000	1.	1.000	98.000	(((
110.000	-	112.000	111.000	1.	1.000	99.000	(((
112.000	-	114.000	113.000	1.	1.000	100.000	(((

(12) ABDOMINAL CIRCUMFERENCE

[illegible]

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	K = 0.120
45.000 - 47.000	46.000	0.	0.0	0.0	(((
47.000 - 49.000	48.000	1.	1.000	1.000	(((
49.000 - 51.000	50.000	4.	4.000	5.000	(((
51.000 - 53.000	52.000	9.	9.000	14.000	(((
53.000 - 55.000	54.000	14.	14.000	28.000	(((
55.000 - 57.000	56.000	15.	15.000	43.000	(((
57.000 - 59.000	58.000	15.	15.000	58.000	(((
59.000 - 61.000	60.000	15.	15.000	73.000	(((
61.000 - 63.000	62.000	12.	12.000	85.000	(((
63.000 - 65.000	64.000	6.	6.000	91.000	(((
65.000 - 67.000	66.000	3.	3.000	94.000	(((
67.000 - 69.000	68.000	2.	2.000	96.000	(((
69.000 - 71.000	70.000	1.	1.000	97.000	(((

(13) THIGH CIRCUMFERENCE			
MEAN	STANDARD DEVIATION	RANGE	
58.07	4.45	48.60 - 69.30 (CM)	
22.86	1.75	19.13 - 27.28 (IN)	
SKEWNESS		KURTOSIS	
0.17		-0.40	
CENTIMETERS	PERCENTILES	INCHES	
47.72	1ST	18.79	
48.93	2ND	19.26	
49.70	3RD	19.57	
50.75	5TH	19.98	
52.36	10TH	20.62	
53.46	15TH	21.05	
54.32	20TH	21.39	
55.07	25TH	21.68	
55.74	30TH	21.94	
56.36	35TH	22.19	
56.94	40TH	22.42	
57.51	45TH	22.64	
58.07	50TH	22.86	
58.63	55TH	23.08	
59.20	60TH	23.31	
59.78	65TH	23.54	
60.40	70TH	23.78	
61.07	75TH	24.04	
61.82	80TH	24.34	
62.68	85TH	24.68	
63.78	90TH	25.11	
65.39	95TH	25.74	
66.44	97TH	26.16	
67.21	98TH	26.46	
68.42	99TH	26.94	

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$k = 0.520$
18.000 - 19.000	18.500	0.	0.0	0.0	0.0	
19.000 - 20.000	19.500	1.	1.000	1.000	1.000	
20.000 - 21.000	20.500	3.	3.000	4.000	4.000	
21.000 - 22.000	21.500	25.	25.000	29.000	29.000	XXXXXXXXXXXXXXXXXXXX
22.000 - 23.000	22.500	18.	18.000	47.000	47.000	XXXXXXXXXXXXXXXXXXXX
23.000 - 24.000	23.500	26.	26.000	73.000	73.000	XXXXXXXXXXXXXXXXXXXX
24.000 - 25.000	24.500	17.	17.000	90.000	90.000	XXXXXXXXXXXXXXXXXXXX
25.000 - 26.000	25.500	5.	5.000	95.000	95.000	XXXXXX
26.000 - 27.000	26.500	3.	3.000	98.000	98.000	XXXX
27.000 - 28.000	27.500	2.	2.000	100.000	100.000	XX

(14) ANKLE CIRCUMFERENCE			
MEAN	STANDARD DEVIATION	RANGE	
23.27	1.57	19.60 - 27.70 (CM)	
9.16	0.62	7.72 - 10.91 (IN)	
SKEWNESS			
0.50			
KURTOSIS			
0.11			
CENTIMETERS	PERCENTILES	INCHES	
19.61	1ST	7.72	
20.04	2ND	7.89	
20.31	3RD	8.00	
20.68	5TH	8.14	
21.26	10TH	8.37	
21.64	15TH	8.52	
21.95	20TH	8.64	
22.21	25TH	8.75	
22.45	30TH	8.84	
22.67	35TH	8.92	
22.88	40TH	9.01	
23.08	45TH	9.08	
23.27	50TH	9.16	
23.47	55TH	9.24	
23.67	60TH	9.32	
23.88	65TH	9.40	
24.10	70TH	9.49	
24.33	75TH	9.58	
24.60	80TH	9.68	
24.90	85TH	9.80	
25.29	90TH	9.96	
25.86	95TH	10.18	
26.23	97TH	10.33	
26.51	98TH	10.44	
26.94	99TH	10.60	

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $K = 0.583$

41.000 -	43.000	42.000	0.	0.0	0.0	#####
43.000 -	45.000	44.000	5.	5.000	5.000	#####
45.000 -	47.000	46.000	9.	9.000	14.000	#####
47.000 -	49.000	48.000	13.	13.000	27.000	#####
49.000 -	51.000	50.000	21.	21.000	48.000	#####
51.000 -	53.000	52.000	29.	29.000	77.000	#####
53.000 -	55.000	54.000	12.	12.000	89.000	#####
55.000 -	57.000	56.000	10.	10.000	99.000	#####
57.000 -	59.000	58.000	2.	2.000	100.000	#####

(15) SITTING HEIGHT
 MEAN 90.91
 STANDARD DEVIATION 3.21
 RANGE 83.60 - 98.00 (CM)
 35.79 1.27 32.91 - 38.58 (IN)
 SKEWNESS -0.24
 KURTOSIS -0.30

CENTIMETERS	PERCENTILES	INCHES
83.44	1ST	32.85
84.31	2ND	33.19
84.87	3RD	33.41
85.63	5TH	33.71
86.79	10TH	34.17
87.58	15TH	34.48
88.21	20TH	34.73
88.75	25TH	34.94
89.23	30TH	35.13
89.68	35TH	35.31
90.10	40TH	35.47
90.51	45TH	35.63
90.91	50TH	35.79
91.32	55TH	35.95
91.73	60TH	36.11
92.15	65TH	36.28
92.60	70TH	36.46
93.08	75TH	36.65
93.62	80TH	36.86
94.25	85TH	37.10
95.04	90TH	37.42
96.20	95TH	37.88
96.96	97TH	38.17
97.52	98TH	38.39
98.39	99TH	38.74

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	K = 0.560
50.000 - 52.000	51.000	0.	0.0	0.0	||||	
52.000 - 54.000	53.000	1.	3.000	3.000	||||	
54.000 - 56.000	55.000	6.	6.000	9.000	||||	
56.000 - 58.000	57.000	22.	22.000	31.000	||||	
58.000 - 60.000	59.000	24.	24.000	55.000	||||	
60.000 - 62.000	61.000	27.	27.000	82.000	||||	
62.000 - 64.000	63.000	13.	13.000	95.000	||||	
64.000 - 66.000	65.000	5.	5.000	100.000	||||	

MEAN	STANDARD DEVIATION	(17) BUTTOCK-KNEE LENGTH RANGE	INCHES
59.53	2.71	53.00 - 65.10 (CM)	20.95
23.44	1.07	20.87 - 25.63 (IN)	21.24
SKEWNESS	KURTOSIS	PERCENTILES	INCHES
-0.07	-0.34	1ST	21.43
		2ND	21.68
		3RD	22.07
		5TH	22.33
		10TH	22.54
		15TH	22.72
		20TH	22.88
		25TH	23.03
		30TH	23.17
		35TH	23.30
		40TH	23.44
		45TH	23.57
		50TH	23.71
		55TH	23.85
		60TH	24.00
		65TH	24.16
		70TH	24.34
		75TH	24.54
		80TH	24.81
		85TH	25.20
		90TH	25.45
		95TH	25.63
		97TH	25.92
		98TH	
		99TH	

SCORE INTERVAL		MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	K = 0.440
62.000 -	64.000	63.000	0.	0.0	0.0	XXXX	
64.000 -	66.000	65.000	1.	1.000	1.000	XXXX	
66.000 -	68.000	67.000	0.	0.0	1.000	XXXX	
68.000 -	70.000	69.000	6.	6.000	7.000	XXXX	
70.000 -	72.000	71.000	11.	11.000	18.000	XXXX	
72.000 -	74.000	73.000	22.	22.000	40.000	XXXX	
74.000 -	76.000	75.000	18.	18.000	58.000	XXXX	
76.000 -	78.000	77.000	21.	21.000	79.000	XXXX	
78.000 -	80.000	79.000	13.	13.000	92.000	XXXX	
80.000 -	82.000	81.000	4.	4.000	96.000	XXXX	
82.000 -	84.000	83.000	4.	4.000	100.000	XXXX	

(18) TOTAL ARM LENGTH		RANGE	
MEAN	STANDARD DEVIATION	65.90 -	83.10 (CM)
75.28	3.44	25.94 -	32.72 (IN)
29.64	1.35	KURTOSIS	
SKEWNESS		-0.33	
0.00			
CENTIMETERS	PERCENTILES	INCHES	
67.28	1ST	26.49	
68.22	2ND	26.86	
68.81	3RD	27.09	
69.62	5TH	27.41	
70.87	10TH	27.90	
71.72	15TH	28.23	
72.38	20TH	28.50	
72.96	25TH	28.72	
73.48	30TH	28.93	
73.95	35TH	29.12	
74.41	40TH	29.29	
74.84	45TH	29.47	
75.28	50TH	29.64	
75.71	55TH	29.81	
76.15	60TH	29.98	
76.60	65TH	30.16	
77.08	70TH	30.35	
77.59	75TH	30.55	
78.17	80TH	30.78	
78.84	85TH	31.04	
79.68	90TH	31.37	
80.93	95TH	31.86	
81.74	97TH	32.18	
82.34	98TH	32.42	
83.27	99TH	32.78	

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	K = 0.400
26.000 -	27.000	26.500	0.	0.0	3.0	
27.000 -	28.000	27.500	1.	1.000	1.000	((
28.000 -	29.000	28.500	5.	5.000	6.000	(((((
29.000 -	30.000	29.500	13.	13.000	19.000	(((((
30.000 -	31.000	30.500	15.	15.000	34.000	(((((
31.000 -	32.000	31.500	20.	20.000	54.000	(((((
32.000 -	33.000	32.500	17.	17.000	71.000	(((((
33.000 -	34.000	33.500	18.	18.000	89.000	(((((
34.000 -	35.000	34.500	7.	7.000	96.000	(((((
35.000 -	36.000	35.500	2.	2.000	98.000	(((((
36.000 -	37.000	36.500	1.	1.000	99.000	((
37.000 -	38.000	37.500	1.	1.000	100.000	((

MEAN	STANDARD DEVIATION	UPPER ARM LENGTH	RANGE
31.87	1.90		27.40 - 37.10 (CM)
12.55	0.75		10.79 - 14.61 (IN)
SKEWNESS	KURTOSIS	PERCENTILES	INCHES
0.15	-0.35	1ST	10.81
		2ND	11.01
		3RD	11.14
		5TH	11.32
		10TH	11.59
		15TH	11.77
		20TH	11.92
		25TH	12.04
		30TH	12.16
		35TH	12.26
		40TH	12.36
		45TH	12.45
		50TH	12.55
		55TH	12.64
		60TH	12.74
		65TH	12.83
		70TH	12.94
		75TH	13.05
		80TH	13.18
		85TH	13.32
		90TH	13.51
		95TH	13.78
		97TH	13.95
		98TH	14.08
		99TH	14.29

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\bar{x} = 0.520$

21.000 -	22.000	21.500	0.	0.0	0.0	0.0
22.000 -	23.000	22.500	1.	1.000	1.000	1.000
23.000 -	24.000	23.500	2.	2.000	3.000	3.000
24.000 -	25.000	24.500	13.	13.000	16.000	16.000
25.000 -	26.000	25.500	20.	20.000	36.000	36.000
26.000 -	27.000	26.500	25.	25.000	61.000	61.000
27.000 -	28.000	27.500	20.	20.000	81.000	81.000
28.000 -	29.000	28.500	11.	11.000	92.000	92.000
29.000 -	30.000	29.500	6.	6.000	98.000	98.000
30.000 -	31.000	30.500	1.	1.000	99.000	99.000

(20) FOREARM LENGTH		RANGE	
MEAN	STANDARD DEVIATION	22.70 -	30.70 (CM)
26.64	1.55	8.94 -	12.09 (IN)
10.49	0.61	KURTOSIS	
		-0.33	
SKEWNESS		PERCENTILES	
0.05		INCHES	
CENTIMETERS		1ST	9.07
23.04		2ND	9.24
23.46		3RD	9.34
23.73		5TH	9.48
24.09		10TH	9.71
24.65		15TH	9.86
25.03		20TH	9.97
25.33		25TH	10.08
25.59		30TH	10.17
25.83		35TH	10.25
26.04		40TH	10.33
26.25		45TH	10.41
26.44		50TH	10.49
26.64		55TH	10.56
26.83		60TH	10.64
27.03		65TH	10.72
27.23		70TH	10.81
27.45		75TH	10.90
27.68		80TH	11.00
27.94		85TH	11.12
28.24		90TH	11.27
28.62		95TH	11.49
29.18		97TH	11.63
29.55		98TH	11.74
29.82		99TH	11.90
30.24			

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\epsilon = 0.040$
4.000 - 4.500	4.250	0.	0.0	0.0	0.0	
4.500 - 5.000	4.750	1.	1.000	1.000	1.000	
5.000 - 5.500	5.250	0.	0.0	1.000	1.000	
5.500 - 6.000	5.750	1.	1.000	2.000	2.000	
6.000 - 6.500	6.250	9.	9.000	11.000	11.000	
6.500 - 7.000	6.750	42.	42.000	53.000	53.000	
7.000 - 7.500	7.250	38.	38.000	91.000	91.000	
7.500 - 8.000	7.750	9.	9.000	100.000	100.000	

(21) BICONDYLAR HUMERUS				
STANDARD DEVIATION		RANGE		
MEAN	0.40	5.00 -	7.90 (CM)	
7.03	0.16	1.97 -	3.11 (IN)	
2.77		KURTOSIS		
SKEWNESS		5.33		
-1.24				
CENTIMETERS		PERCENTILES		
6.10	1ST	INCHES		
6.21	2ND	2.40		
6.27	3RD	2.44		
6.37	5TH	2.47		
6.51	10TH	2.51		
6.61	15TH	2.56		
6.69	20TH	2.60		
6.76	25TH	2.63		
6.82	30TH	2.66		
6.87	35TH	2.68		
6.92	40TH	2.71		
6.98	45TH	2.73		
7.03	50TH	2.75		
7.08	55TH	2.77		
7.13	60TH	2.79		
7.18	65TH	2.81		
7.24	70TH	2.83		
7.30	75TH	2.85		
7.36	80TH	2.87		
7.44	85TH	2.90		
7.54	90TH	2.93		
7.68	95TH	2.97		
7.78	97TH	3.02		
7.85	98TH	3.06		
7.96	99TH	3.09		
		3.13		

SCORE INTERVAL	MID-POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	MISFORD'S A1	X = 0.900
4.000 -	4.500	4.250	0.	0.0	3.3	
4.500 -	5.000	4.750	17.	17.000	17.000	XXXXXXXXXXXXXXXXXXXX
5.000 -	5.500	5.250	45.	45.000	52.000	XXXXXXXXXXXXXXXXXXXX
5.500 -	6.000	5.250	38.	38.000	100.000	XXXXXXXXXXXXXXXXXXXX

(22) WAIST BREADTH			
MEAN	STANDARD DEVIATION	RANGE	
5.42	0.34	4.60 - 6.00 (CM)	
2.14	0.14	1.81 - 2.36 (IN)	

CENTIMETERS	SKEWNESS	KURTOSIS	PERCENTILES	INCHES
	-0.31	-0.51		
4.62			1ST	1.82
4.72			2ND	1.86
4.78			3RD	1.88
4.86			5TH	1.91
4.98			10TH	1.96
5.07			15TH	2.00
5.13			20TH	2.02
5.19			25TH	2.04
5.24			30TH	2.06
5.29			35TH	2.08
5.34			40TH	2.10
5.38			45TH	2.12
5.42			50TH	2.14
5.47			55TH	2.15
5.51			60TH	2.17
5.56			65TH	2.19
5.60			70TH	2.21
5.65			75TH	2.23
5.71			80TH	2.25
5.78			85TH	2.27
5.86			90TH	2.31
5.99			95TH	2.36
6.07			97TH	2.39
6.13			98TH	2.41
6.22			99TH	2.45

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT DIST. GRADE 4 0.920

6.500 -	7.000	6.750	0.	0.0	0.0	0.0
7.000 -	7.500	7.250	3.	3.000	3.000	3.000
7.500 -	8.000	7.750	14.	14.000	17.000	17.000
8.000 -	8.500	8.250	46.	46.000	63.000	63.000
8.500 -	9.000	8.750	35.	35.000	98.000	98.000
9.000 -	9.500	9.250	2.	2.000	100.000	100.000

123) HAND BREADTH		RANGE	
MEAN	8.40	7.20 -	9.40 ICM
STANDARD DEVIATION	0.40	2.83 -	3.70 ITM
3.31	0.16	KURTOSIS	
SKEWNESS		0.12	
-0.43		PERCENTILES	
CENTIMETERS	INCHES		
7.46	2.94	1ST	
7.57	2.98	2ND	
7.64	3.01	3RD	
7.74	3.05	5TH	
7.88	3.10	10TH	
7.98	3.14	15TH	
8.06	3.17	20TH	
8.13	3.20	25TH	
8.19	3.22	30TH	
8.25	3.25	35TH	
8.30	3.27	40TH	
8.35	3.29	45TH	
8.40	3.31	50TH	
8.45	3.33	55TH	
8.50	3.35	60TH	
8.56	3.37	65TH	
8.61	3.39	70TH	
8.67	3.41	75TH	
8.74	3.44	80TH	
8.82	3.47	85TH	
8.92	3.51	90TH	
9.06	3.57	95TH	
9.16	3.61	97TH	
9.23	3.63	98TH	
9.34	3.68	99TH	

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	1.150
17.000 -	18.000	17.500	0%	0.0	0.0
19.000 -	19.000	18.500	13%	13.000	13.000
19.000 -	20.000	19.500	58%	58.000	71.000
20.000 -	21.000	20.500	25%	25.000	96.000
21.000 -	22.000	21.500	3%	3.000	99.000
22.000 -	23.000	22.500	1%	1.000	100.000

(24) HEAD LENGTH		STANDARD DEVIATION		RANGE	
MEAN	STANDARD DEVIATION	0.73	0.29	18.20 -	22.10 (CM)
19.75	0.73	0.29	0.29	7.17 -	8.70 (IN)
7.78	0.29	0.29	0.29	7.17 -	8.70 (IN)
SKEWNESS		KURTOSIS		PERCENTILES	
0.82		1.11		PERCENTILES	
CENTIMETERS	INCHES	1ST	2ND	3RD	5TH
18.05	7.11	18.05	18.25	18.38	18.55
18.25	7.18	18.25	18.45	18.58	18.75
18.45	7.25	18.45	18.65	18.78	18.95
18.65	7.32	18.65	18.85	18.98	19.15
18.85	7.40	18.85	19.05	19.25	19.45
19.05	7.48	19.05	19.25	19.45	19.65
19.25	7.56	19.25	19.45	19.65	19.85
19.45	7.64	19.45	19.65	19.85	20.05
19.65	7.72	19.65	19.85	20.05	20.25
19.85	7.80	19.85	20.05	20.25	20.45
20.05	7.88	20.05	20.25	20.45	20.65
20.25	7.96	20.25	20.45	20.65	20.85
20.45	8.04	20.45	20.65	20.85	21.05
20.65	8.12	20.65	20.85	21.05	21.25
20.85	8.20	20.85	21.05	21.25	21.45
21.05	8.28	21.05	21.25	21.45	21.65
21.25	8.36	21.25	21.45	21.65	21.85
21.45	8.44	21.45	21.65	21.85	22.05

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\Sigma = 0.580$

13.500 - 14.000	13.750	0.	0.0	0.0	(XXXXXXXXXX)
14.000 - 14.500	14.250	6.	6.000	6.000	(XXXXXXXXXX)
14.500 - 15.000	14.750	26.	26.000	30.000	(XXXXXXXXXX)
15.000 - 15.500	15.250	28.	28.000	58.000	(XXXXXXXXXX)
15.500 - 16.000	15.750	29.	29.000	87.000	(XXXXXXXXXX)
16.000 - 16.500	16.250	7.	7.000	94.000	(XXXXXXXXXX)
16.500 - 17.000	16.750	5.	5.000	99.000	(XXXXXX)
17.000 - 17.500	17.250	0.	0.0	99.000	
17.500 - 18.000	17.750	1.	1.000	100.000	(

MEAN		(25) HEAD BREADTH	RANGE	
15.40		STANDARD DEVIATION	14.20 - 17.70 (CM)	
6.06		0.62	5.59 - 6.97 (IN)	
		0.25	KURTOSIS	
			0.85	
		SKEWNESS		INCHES
		0.68		
		PERCENTILES		
		1ST		5.49
		2ND		5.56
		3RD		5.60
		5TH		5.66
		10TH		5.75
		15TH		5.81
		20TH		5.86
		25TH		5.90
		30TH		5.94
		35TH		5.97
		40TH		6.00
		45TH		6.03
		50TH		6.06
		55TH		6.10
		60TH		6.13
		65TH		6.16
		70TH		6.19
		75TH		6.23
		80TH		6.27
		85TH		6.32
		90TH		6.38
		95TH		6.47
		97TH		6.53
		98TH		6.57
		99TH		6.64

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	1.040
10.000 -	11.000	10.500	0.	0.0	0.0
11.000 -	12.000	11.500	8.	8.000	8.000
12.000 -	13.000	12.500	22.	22.000	22.000
13.000 -	14.000	13.500	52.	52.000	52.000
14.000 -	15.000	14.500	16.	16.000	16.000
15.000 -	16.000	15.500	2.	2.000	2.000

(26) BIZYGOMATIC DIAMETER			
MEAN	STANDARD DEVIATION	RANGE	
13.36	0.81	11.40 - 15.30 (CM)	
5.26	0.32	4.49 - 6.02 (IN)	
KURTOSIS			
-0.17			
SKEWNESS			
-0.17			
CENTIMETERS	PERCENTILES	INCHES	
11.49	1ST	4.52	
11.70	2ND	4.61	
11.84	3RD	4.66	
12.03	5TH	4.74	
12.33	10TH	4.85	
12.52	15TH	4.93	
12.68	20TH	4.99	
12.82	25TH	5.05	
12.94	30TH	5.09	
13.05	35TH	5.14	
13.16	40TH	5.18	
13.26	45TH	5.22	
13.36	50TH	5.26	
13.46	55TH	5.30	
13.56	60TH	5.34	
13.67	65TH	5.38	
13.78	70TH	5.43	
13.90	75TH	5.47	
14.04	80TH	5.53	
14.20	85TH	5.59	
14.39	90TH	5.67	
14.69	95TH	5.78	
14.88	97TH	5.86	
15.02	98TH	5.91	
15.23	99TH	6.00	

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT
10.000 - 10.500	10.250	0.	0.0	0.0
10.500 - 11.000	10.750	1.	1.000	1.000
11.000 - 11.500	11.250	11.	11.000	12.000
11.500 - 12.000	11.750	24.	24.000	36.000
12.000 - 12.500	12.250	38.	38.000	74.000
12.500 - 13.000	12.750	13.	13.000	87.000
13.000 - 13.500	13.250	9.	9.000	96.000

(27) NASION-GNATHION			
MEAN	STANDARD DEVIATION	RANGE	
12.20	0.55	11.00 - 13.50 (ICM)	
4.80	0.22	4.33 - 5.31 (IN)	
SKEWNESS		KURTOSIS	
0.06		-0.40	
CENTIMETERS	PERCENTILES	INCHES	
10.92	1ST	4.30	
11.07	2ND	4.36	
11.16	3RD	4.39	
11.29	5TH	4.45	
11.49	10TH	4.53	
11.63	15TH	4.58	
11.74	20TH	4.62	
11.83	25TH	4.66	
11.91	30TH	4.69	
11.99	35TH	4.72	
12.06	40TH	4.75	
12.13	45TH	4.78	
12.20	50TH	4.80	
12.27	55TH	4.83	
12.34	60TH	4.86	
12.41	65TH	4.89	
12.49	70TH	4.92	
12.57	75TH	4.95	
12.67	80TH	4.99	
12.77	85TH	5.03	
12.91	90TH	5.08	
13.11	95TH	5.16	
13.24	97TH	5.21	
13.34	98TH	5.25	
13.49	99TH	5.31	

SCORE INTERVAL				MID POINT FREQUENCY PERCENT CUMULATIVE HISTOGRAM (= 0.900			
				PERCENT			
3.500 -	4.000	3.750	0.	0.0	0.0	0.0	
4.000 -	4.500	4.250	1.	1.000	1.000	1.000	(
4.500 -	5.000	4.750	29.	29.000	30.000	30.000	(
5.000 -	5.500	5.250	45.	45.000	75.000	75.000	(
5.500 -	6.000	5.750	21.	21.000	96.000	96.000	(
6.000 -	6.500	6.250	4.	4.000	100.000	100.000	(

(28) NOSE HEIGHT			
MEAN		STANDARD DEVIATION	
5.30	0.36	4.50 -	6.20 (CM)
2.09	0.14	1.77 -	2.44 (IN)
SKEWNESS		KURTOSIS	
0.37	-0.29		
CENTIMETERS		PERCENTILES	
4.45	1ST	INCHES	
4.56	2ND		
4.62	3RD		
4.71	5TH		
4.84	10TH		
4.93	15TH		
4.99	20TH		
5.05	25TH		
5.11	30TH		
5.16	35TH		
5.21	40TH		
5.25	45TH		
5.30	50TH		
5.34	55TH		
5.39	60TH		
5.43	65TH		
5.48	70TH		
5.54	75TH		
5.60	80TH		
5.67	85TH		
5.75	90TH		
5.88	95TH		
5.97	97TH		
6.03	98TH		
6.13	99TH		

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	K = 0.800
2.000 -	2.250	2.125	0.	0.0	0.0	
2.250 -	2.500	2.375	1.	1.000	1.000	
2.500 -	2.750	2.625	1.	1.000	2.000	
2.750 -	3.000	2.875	14.	14.000	15.000	XXXXXXXXXXXX
3.000 -	3.250	3.125	16.	14.000	32.000	XXXXXXXXXXXX
3.250 -	3.500	3.375	40.	40.000	72.000	XXXXXXXXXXXX
3.500 -	3.750	3.625	18.	18.000	90.000	XXXXXXXXXXXX
3.750 -	4.000	3.875	6.	6.000	95.000	XXXXXX
4.000 -	4.250	4.125	3.	3.000	98.000	XXX
4.250 -	4.500	4.375	1.	1.000	100.000	X

(29) NOSE BREADTH			
MEAN	STANDARD DEVIATION	RANGE	
3.38	0.33	2.40 -	4.30 (CM)
1.33	0.13	0.94 -	1.69 (IN)
SKEWNESS		KURTOSIS	
0.22		0.43	
CENTIMETERS	PERCENTILES	INCHES	
2.60	1ST	1.03	
2.69	2ND	1.06	
2.75	3RD	1.08	
2.83	5TH	1.11	
2.95	10TH	1.16	
3.03	15TH	1.19	
3.10	20TH	1.22	
3.15	25TH	1.24	
3.20	30TH	1.26	
3.25	35TH	1.28	
3.29	40TH	1.30	
3.34	45TH	1.31	
3.38	50TH	1.33	
3.42	55TH	1.35	
3.46	60TH	1.36	
3.51	65TH	1.38	
3.55	70TH	1.40	
3.60	75TH	1.42	
3.66	80TH	1.44	
3.72	85TH	1.47	
3.81	90TH	1.50	
3.93	95TH	1.55	
4.01	97TH	1.58	
4.06	98TH	1.60	
4.15	99TH	1.64	

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\bar{x} = 0.540$

3.500 -	3.750	0.	0.0	0.0	0.0	
3.750 -	4.000	1.	1.000	1.000	1.000	x
4.000 -	4.250	0.	0.0	1.000	1.000	
4.250 -	4.500	0.	0.0	1.000	1.000	
4.500 -	4.750	0.	0.0	1.000	1.000	
4.750 -	5.000	0.	0.0	1.000	1.000	
5.000 -	5.250	0.	0.0	1.000	1.000	
5.250 -	5.500	3.	3.000	4.000	4.000	xxxx
5.500 -	5.750	2.	2.000	6.000	6.000	xx
5.750 -	6.000	16.	16.000	22.000	22.000	xxxxxxxxxxxxxxxxxxxx
6.000 -	6.250	17.	13.000	35.000	35.000	xxxxxxxxxxxxxxxxxxxx
6.250 -	6.500	27.	27.000	52.000	52.000	xxxxxxxxxxxxxxxxxxxx
6.500 -	6.750	16.	16.000	78.000	78.000	xxxxxxxxxxxxxxxxxxxx
6.750 -	7.000	16.	16.000	94.000	94.000	xxxxxxxxxxxxxxxxxxxx
7.000 -	7.250	4.	4.000	98.000	98.000	xxxxxx
7.250 -	7.500	2.	2.000	100.000	100.000	xx

MEAN 6.39
STANDARD DEVIATION 0.51
RANGE 3.80 - 7.50 (CM)
KURTOSIS 5.38

PERCENTILES	INCHES
1ST	2.05
2ND	2.11
3RD	2.14
5TH	2.19
10TH	2.26
15TH	2.31
20TH	2.35
25TH	2.38
30TH	2.41
35TH	2.44
40TH	2.46
45TH	2.49
50TH	2.52
55TH	2.54
60TH	2.57
65TH	2.59
70TH	2.62
75TH	2.65
80TH	2.68
85TH	2.72
90TH	2.77
95TH	2.84
97TH	2.89
98TH	2.92
99TH	2.98

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\epsilon = 0.550$

2.500 -	2.750	2.625	0.	0.0	0.0	0.0
2.750 -	3.000	2.875	1.	1.000	1.000	1.000
3.000 -	3.250	3.125	3.	3.000	4.000	4.000
3.250 -	3.500	3.375	19.	19.000	23.000	23.000
3.500 -	3.750	3.625	20.	20.000	43.000	43.000
3.750 -	4.000	3.875	33.	33.000	76.000	76.000
4.000 -	4.250	4.125	11.	11.000	87.000	87.000
4.250 -	4.500	4.375	11.	11.000	98.000	98.000
4.500 -	4.750	4.625	1.	1.000	99.000	99.000
4.750 -	5.000	4.875	1.	1.000	100.000	100.000

(31) EAR BREADTH		STANDARD DEVIATION		RANGE	
MEAN	3.83	0.36	0.14	3.00 -	4.80 (CM)
	1.51	0.26	0.14	1.18 -	1.89 (IN)
CENTIMETERS		PERCENTILES		KURTOSIS	
				-0.20	
3.00	1ST	1.18	INCHES		
3.10	2ND	1.22			
3.16	3RD	1.24			
3.24	5TH	1.28			
3.37	10TH	1.33			
3.46	15TH	1.36			
3.53	20TH	1.39			
3.59	25TH	1.41			
3.64	30TH	1.43			
3.69	35TH	1.45			
3.74	40TH	1.47			
3.79	45TH	1.49			
3.83	50TH	1.51			
3.88	55TH	1.53			
3.92	60TH	1.54			
3.97	65TH	1.56			
4.02	70TH	1.58			
4.07	75TH	1.60			
4.13	80TH	1.63			
4.20	85TH	1.65			
4.29	90TH	1.69			
4.42	95TH	1.74			
4.50	97TH	1.77			
4.57	98TH	1.80			
4.66	99TH	1.84			

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HJ5 TOGRAM X= 0.320

15.000 -	15.500	15.250	0.	0.0	0.0	XXXXXXXXX
15.500 -	16.000	15.750	3.	3.000	3.000	XXXXXXXXX
16.000 -	16.500	16.250	6.	6.000	9.000	XXXXXXXXX
16.500 -	17.000	16.750	8.	8.000	17.000	XXXXXXXXX
17.000 -	17.500	17.250	11.	11.000	28.000	XXXXXXXXX
17.500 -	18.000	17.750	16.	16.000	44.000	XXXXXXXXX
18.000 -	18.500	18.250	15.	15.000	59.000	XXXXXXXXX
18.500 -	19.000	18.750	12.	12.000	71.000	XXXXXXXXX
19.000 -	19.500	19.250	14.	14.000	85.000	XXXXXXXXX
19.500 -	20.000	19.750	8.	8.000	93.000	XXXXXXXXX
20.000 -	20.500	20.250	3.	3.000	96.000	XXXXXXXXX
20.500 -	21.000	20.750	2.	2.000	98.000	XXXXXX
21.000 -	21.500	21.250	1.	1.000	99.000	XX
21.500 -	22.000	21.750	0.	0.0	99.000	
22.000 -	22.500	22.250	1.	1.000	100.000	XX

MEAN 18.31
STANDARD DEVIATION 1.27
UPPER FACE HEIGHT RANGE 15.70 - 22.40 (CM)
KURTOSIS 0.11

SKENESS 0.34

CENTIMETERS	PERCENTILES	INCHES
15.36	1ST	6.05
15.70	2ND	6.18
15.92	3RD	6.27
16.22	5TH	6.39
16.68	10TH	6.57
16.99	15TH	6.69
17.24	20TH	6.79
17.45	25TH	6.87
17.64	30TH	6.95
17.82	35TH	7.02
17.99	40TH	7.08
18.15	45TH	7.14
18.31	50TH	7.21
18.47	55TH	7.27
18.63	60TH	7.33
18.80	65TH	7.40
18.97	70TH	7.47
19.16	75TH	7.54
19.38	80TH	7.63
19.62	85TH	7.72
19.93	90TH	7.85
20.39	95TH	8.03
20.69	97TH	8.15
20.91	98TH	8.23
21.26	99TH	8.37

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	X = 0.960
8.500 - 9.000	8.750	0.	0.0	0.0		
9.000 - 9.500	9.250	2.	2.000	2.000	██	
9.500 - 10.000	9.750	8.	8.000	10.000	██████	
10.000 - 10.500	10.250	21.	21.000	31.000	██████████	
10.500 - 11.000	10.750	42.	42.000	73.000	██████████████	
11.000 - 11.500	11.250	19.	19.000	92.000	██████████████	
11.500 - 12.000	11.750	7.	7.000	99.000	██████████	
12.000 - 12.500	12.250	0.	0.0	99.000		
12.500 - 13.000	12.750	1.	1.000	100.000	█	

(34) BICONICAL DIAMETER			
MEAN	STANDARD DEVIATION	RANGE	
10.76	0.55	9.50 - 12.60 (CM)	
4.24	0.22	3.74 - 4.96 (IN)	
SKEWNESS		KURTOSIS	
0.20		0.25	
CENTIMETERS	PERCENTILES	INCHES	
9.48	1ST	3.73	
9.63	2ND	3.79	
9.72	3RD	3.83	
9.85	5TH	3.88	
10.05	10TH	3.96	
10.19	15TH	4.01	
10.30	20TH	4.05	
10.39	25TH	4.09	
10.47	30TH	4.12	
10.55	35TH	4.15	
10.62	40TH	4.18	
10.69	45TH	4.21	
10.76	50TH	4.24	
10.83	55TH	4.26	
10.90	60TH	4.29	
10.98	65TH	4.32	
11.05	70TH	4.35	
11.14	75TH	4.38	
11.23	80TH	4.42	
11.34	85TH	4.46	
11.47	90TH	4.52	
11.67	95TH	4.60	
11.80	97TH	4.65	
11.90	98TH	4.69	
12.05	99TH	4.74	

SCALE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\bar{x} = 0.540$

3.750 -	4.000	3.875	0.	0.0	0.0	0.0	0.0
4.000 -	4.250	4.125	1.	1.000	1.000	1.000	1.000
4.250 -	4.500	4.375	5.	5.000	5.000	5.000	5.000
4.500 -	4.750	4.625	9.	9.000	15.000	15.000	15.000
4.750 -	5.000	4.875	24.	24.000	39.000	39.000	39.000
5.000 -	5.250	5.125	12.	12.000	51.000	51.000	51.000
5.250 -	5.500	5.375	29.	29.000	80.000	80.000	80.000
5.500 -	5.750	5.625	13.	13.000	93.000	93.000	93.000
5.750 -	6.000	5.875	6.	6.000	99.000	99.000	99.000
6.000 -	6.250	6.125	1.	1.000	100.000	100.000	100.000

MEAN	5.20	STANDARD DEVIATION	0.40	(35) MOUTH WIDTH	4.20 - 6.10 (CM)	
	2.05		0.16		1.65 - 2.40 (IN)	
		SKEWNESS	-0.06		KURTOSIS	-0.50
CENTIMETERS		PERCENTILES				
4.26	1ST				INCHES	1.68
4.37	2ND					1.72
4.44	3RD					1.75
4.54	5TH					1.79
4.68	10TH					1.84
4.78	15TH					1.88
4.86	20TH					1.91
4.93	25TH					1.94
4.99	30TH					1.96
5.05	35TH					1.99
5.10	40TH					2.01
5.15	45TH					2.03
5.20	50TH					2.05
5.25	55TH					2.07
5.30	60TH					2.09
5.35	65TH					2.11
5.41	70TH					2.13
5.47	75TH					2.15
5.54	80TH					2.18
5.62	85TH					2.21
5.72	90TH					2.25
5.86	95TH					2.31
5.96	97TH					2.35
6.03	98TH					2.37
6.14	99TH					2.42

SCORE INTERVAL	WTO POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\bar{x} = 0.500$
0.200 -	0.400	0.300	0.9	0.0	0.0	0.0
0.400 -	0.600	0.500	1.5	1.000	1.000	1.000
0.600 -	0.800	0.700	0.	0.0	1.000	1.000
0.800 -	1.000	0.900	4.	4.000	5.000	5.000
1.000 -	1.200	1.100	9.	9.000	14.000	14.000
1.200 -	1.400	1.300	14.	14.000	28.000	28.000
1.400 -	1.600	1.500	25.	25.000	53.000	53.000
1.600 -	1.800	1.700	23.	22.000	75.000	75.000
1.800 -	2.000	1.900	5.	5.000	31.000	31.000
2.000 -	2.200	2.100	14.	14.000	35.000	35.000
2.200 -	2.400	2.300	4.	4.000	39.000	39.000
2.400 -	2.600	2.500	1.	1.000	100.000	100.000

(36) LIP THICKNESS		RANGE	
MEAN	STANDARD DEVIATION	0.50 -	2.50 (CM)
1.62	0.37	0.20 -	0.98 (IN)
0.64	0.14	KURTOSIS	
SKEWNESS		0.16	
-0.24		PERCENTILES	
CENTIMETERS		INCHES	
0.77	1ST	0.30	
0.87	2ND	0.34	
0.94	3RD	0.37	
1.02	5TH	0.40	
1.15	10TH	0.45	
1.24	15TH	0.49	
1.32	20TH	0.52	
1.38	25TH	0.54	
1.43	30TH	0.56	
1.48	35TH	0.58	
1.53	40TH	0.60	
1.58	45TH	0.62	
1.62	50TH	0.64	
1.67	55TH	0.66	
1.72	60TH	0.68	
1.76	65TH	0.69	
1.81	70TH	0.71	
1.87	75TH	0.74	
1.93	80TH	0.76	
2.00	85TH	0.79	
2.09	90TH	0.82	
2.22	95TH	0.88	
2.31	97TH	0.91	
2.37	98TH	0.93	
2.47	99TH	0.97	

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	\bar{x}	s
11.500 - 12.000	11.750	0	0.0	0.0		12.26	1.540
12.000 - 12.500	12.250	1	1.000	1.000			
12.500 - 13.000	12.750	3	3.000	4.000			
13.000 - 13.500	13.250	15	15.000	19.000			
13.500 - 14.000	13.750	19	19.000	38.000			
14.000 - 14.500	14.250	27	27.000	65.000			
14.500 - 15.000	14.750	22	22.000	87.000			
15.000 - 15.500	15.250	11	11.000	98.000			
15.500 - 16.000	15.750	2	2.000	100.000			
16.000 - 16.500	16.250	1	1.000	100.000			

MEAN	STANDARD DEVIATION	HEAD HEIGHT	RANGE
14.26	0.75	12.20 - 16.10 (CM)	
5.61	0.30	4.80 - 6.34 (IN)	
SKEWNESS	KURTOSIS	PERCENTILES	INCHES
-0.08	-0.22	1ST	4.93
		2ND	5.01
		3RD	5.06
		5TH	5.13
		10TH	5.23
		15TH	5.31
		20TH	5.36
		25TH	5.41
		30TH	5.46
		35TH	5.50
		40TH	5.54
		45TH	5.58
		50TH	5.61
		55TH	5.65
		60TH	5.69
		65TH	5.73
		70TH	5.77
		75TH	5.81
		80TH	5.86
		85TH	5.92
		90TH	5.99
		95TH	6.10
		97TH	6.17
		98TH	6.22
		99TH	6.30

SIZE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM X = 3.700

21.000 - 22.000	21.500	0.	0.0	0.0	X
22.000 - 23.000	22.500	1.	1.000	1.000	X
23.000 - 24.000	23.500	3.	3.000	4.000	X
24.000 - 25.000	24.500	9.	9.000	13.000	X
25.000 - 26.000	25.500	19.	19.000	32.000	X
26.000 - 27.000	26.500	35.	35.000	57.000	X
27.000 - 28.000	27.500	23.	23.000	90.000	X
28.000 - 29.000	28.500	5.	6.000	96.000	X
29.000 - 30.000	29.500	3.	3.000	99.000	X
30.000 - 31.000	30.500	0.	0.0	99.000	X
31.000 - 32.000	31.500	1.	1.000	100.000	X

139) FOOT LENGTH		RANGE	
STANDARD DEVIATION		22.80 - 31.70 (CM)	
MEAN		8.98 - 12.48 (IN)	
26.52		KURTOSIS	
10.44		1.41	
SKEWNESS		PERCENTILES	
0.20		INCHES	
CENTIMETERS		1ST	
23.32		2ND	
23.70		3RD	
23.94		5TH	
24.26		10TH	
24.76		15TH	
25.10		20TH	
25.37		25TH	
25.60		30TH	
25.80		35TH	
25.99		40TH	
26.18		45TH	
26.35		50TH	
26.52		55TH	
26.70		60TH	
26.87		65TH	
27.05		70TH	
27.24		75TH	
27.45		80TH	
27.68		85TH	
27.95		90TH	
28.29		95TH	
28.79		97TH	
29.11		98TH	
29.35		99TH	
29.72			

SCORE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	MISSING	K
24.000 - 25.000	24.500	0.	0.0	0.0	XXXXX	
25.000 - 26.000	25.500	1.	3.000	3.000	XXXXX	
26.000 - 27.000	26.500	4.	6.000	7.000	XXXXX	
27.000 - 28.000	27.500	13.	13.000	20.000	XXXXXXXXXXXXXXXXXXXX	
28.000 - 29.000	28.500	14.	14.000	34.000	XXXXXXXXXXXXXXXXXXXX	
29.000 - 30.000	29.500	19.	19.000	53.000	XXXXXXXXXXXXXXXXXXXX	
30.000 - 31.000	30.500	15.	15.000	68.000	XXXXXXXXXXXXXXXXXXXX	
31.000 - 32.000	31.500	9.	9.000	77.000	XXXXXXXXXXXXXXXXXXXX	
32.000 - 33.000	32.500	11.	11.000	88.000	XXXXXXXXXXXXXXXXXXXX	
33.000 - 34.000	33.500	2.	2.000	90.000	XXXXX	
34.000 - 35.000	34.500	5.	5.000	95.000	XXXXX	
35.000 - 36.000	35.500	4.	4.000	99.000	XXXXX	
36.000 - 37.000	36.500	1.	1.000	100.000	XX	

(42) UPPER ARM RELAX CIRCUMFERENCE			
MEAN	STANDARD DEVIATION	25-50 - 37.00 (CM)	
30.37	2.49	10.04 - 14.57 (IN)	
11.96	0.98	KURTOSIS	
		-0.26	
SKEWNESS		PERCENTILES	
0.46		INCHES	
CENTIMETERS		1ST	
24.58		2ND	9.68
25.26		3RD	9.95
25.69		5TH	10.11
26.28		10TH	10.35
27.18		15TH	10.70
27.79		20TH	10.94
28.28		25TH	11.13
28.69		30TH	11.30
29.07		35TH	11.44
29.41		40TH	11.58
29.74		45TH	11.71
30.06		50TH	11.83
30.37		55TH	11.96
30.69		60TH	12.08
31.00		65TH	12.21
31.33		70TH	12.33
31.68		75TH	12.47
32.05		80TH	12.62
32.47		85TH	12.78
32.95		90TH	12.97
33.56		95TH	13.21
34.47		96TH	13.57
35.05		97TH	13.80
35.48		98TH	13.97
36.16		99TH	14.24

HISTOGRAM K= 0.430

PERCENT CUMULATIVE PERCENT

SCALE INTERVAL

26.000	-	27.000	26.500	0.	0.0	0.0	xxx
27.000	-	28.000	27.500	1.	1.000	1.000	xxxxxxx
28.000	-	29.000	28.500	3.	3.000	4.000	xxxxxxx
29.000	-	30.000	29.500	2.	2.000	6.000	xxxxxx
30.000	-	31.000	30.500	9.	9.000	15.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
31.000	-	32.000	31.500	15.	15.000	30.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
32.000	-	33.000	32.500	15.	15.000	45.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
33.000	-	34.000	33.500	13.	13.000	58.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
34.000	-	35.000	34.500	13.	13.000	71.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
35.000	-	36.000	35.500	11.	11.000	82.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
36.000	-	37.000	36.500	6.	6.000	88.000	xxxxxxxxxxxxxxxxxxxxxxxxxxxx
37.000	-	38.000	37.500	5.	5.000	93.000	xxxxxxxxxxxxxxxxxxxx
38.000	-	39.000	38.500	5.	5.000	98.000	xxxxxxxxxxxxxxxxxxxx
39.000	-	40.000	39.500	2.	2.000	100.000	xxxxxx

(43) UPPER ARM CONTR. CIRCUMFERENCE
STANDARD DEVIATION RANGE
2.67 27.50 - 40.00 (CM)
1.05 10.83 - 15.75 (IN)

SKEWNESS KURTOSIS
0.26 -0.43

CENTIMETERS	PERCENTILES	INCHES
27.60	1ST	10.87
28.33	2ND	11.15
28.79	3RD	11.33
29.42	5TH	11.58
30.39	10TH	11.96
31.04	15TH	12.22
31.56	20TH	12.42
32.01	25TH	12.60
32.41	30TH	12.76
32.78	35TH	12.90
33.13	40TH	13.04
33.47	45TH	13.18
33.80	50TH	13.31
34.14	55TH	13.44
34.48	60TH	13.57
34.83	65TH	13.71
35.20	70TH	13.86
35.60	75TH	14.02
36.05	80TH	14.19
36.57	85TH	14.40
37.22	90TH	14.65
38.19	95TH	15.04
38.82	97TH	15.28
39.28	98TH	15.46
40.01	99TH	15.75

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM K= 0.540

23.000 -	24.000	23.500	0.	0.	0.0	XXXXXX
24.000 -	25.000	24.500	5.	5.000	5.000	XXXXXXXXXX
25.000 -	26.000	25.500	9.	9.000	13.000	XXXXXXXXXXXX
26.000 -	27.000	26.500	27.	27.000	40.000	XXXXXXXXXXXXXXXXXXXX
27.000 -	28.000	27.500	22.	22.000	52.000	XXXXXXXXXXXXXXXXXXXX
28.000 -	29.000	28.500	17.	17.000	69.000	XXXXXXXXXXXXXXXXXXXX
29.000 -	30.000	29.500	8.	8.000	77.000	XXXXXXXXXXXXXXXXXXXX
30.000 -	31.000	30.500	9.	9.000	86.000	XXXXXXXXXXXXXXXXXXXX
31.000 -	32.000	31.500	4.	4.000	90.000	XXXXXX

(44) FOREARM CIRCUMFERENCE			
MEAN	STANDARD DEVIATION	RANGE	
27.81	1.70	24.30 - 32.00 (CM)	
10.95	0.67	9.57 - 12.60 (IN)	
SKEWNESS		KURTOSIS	
0.37		-0.34	
CENTIMETERS		PERCENTILES	INCHES
23.85	1ST		9.39
24.31	2ND		9.57
24.61	3RD		9.69
25.01	5TH		9.85
25.63	10TH		10.09
26.04	15TH		10.25
26.37	20TH		10.38
26.66	25TH		10.50
26.91	30TH		10.60
27.15	35TH		10.69
27.38	40TH		10.78
27.59	45TH		10.86
27.81	50TH		10.95
28.02	55TH		11.03
28.24	60TH		11.12
28.46	65TH		11.21
28.70	70TH		11.30
28.95	75TH		11.40
29.24	80TH		11.51
29.57	85TH		11.64
29.99	90TH		11.81
30.60	95TH		12.05
31.01	97TH		12.21
31.30	98TH		12.32
31.76	99TH		12.50

$x = 0.470$

NO. OF	IN F. V. 1911	NO. OF	IN F. V. 1911	PERCENT	PERCENT	CUMULATIVE PERCENT
1	15,500	14,750	0.	0.	0.	0.0
2	16,500	15,250	2.	2.000	2.000	2.000
3	19,500	15,750	5.	5.000	7.000	7.000
4	16,000	16,250	17.	17.000	24.000	24.000
5	16,500	16,750	19.	19.000	43.000	43.000
6	17,000	17,250	21.	21.000	64.000	64.000
7	17,500	17,500	21.	21.000	85.000	85.000
8	18,500	18,250	9.	9.000	94.000	94.000
9	19,000	18,750	4.	4.000	98.000	98.000
10	19,500	19,250	1.	1.000	99.000	99.000
11	20,000	19,750	0.	0.	99.000	99.000
12	20,500	20,250	2.	2.000	100.000	100.000

MEAN	STANDARD DEVIATION	[45] WRIST CIRCUMFERENCE RANGE	
		15.40 - 20.50 (CM)	6.06 - 8.07 (IN)
17.32	0.94		
6.82	0.37		
		KURTOSIS	
		1.08	
		PERCENTILES	
CENTIMETERS	0.65		INCHES
15.14		1ST	5.96
15.39		2ND	6.06
15.55		3RD	6.12
15.77		5TH	6.21
16.12		10TH	6.34
16.35		15TH	6.44
16.53		20TH	6.51
16.69		25TH	6.57
16.83		30TH	6.62
16.96		35TH	6.68
17.08		40TH	6.72
17.20		45TH	6.77
17.32		50TH	6.82
17.44		55TH	6.86
17.55		60TH	6.91
17.68		65TH	6.96
17.81		70TH	7.01
17.95		75TH	7.07
18.11		80TH	7.13
18.29		85TH	7.20
18.52		90TH	7.29
18.86		95TH	7.42
19.08		97TH	7.51
19.24		98TH	7.59
19.50		99TH	7.68

MIS175244 x = 0.600

RELATIVE
PERCENT

PERCENT

FREQUENCY

410 POINT

Travel Tips

30.000	0.	3.0	0.0	
32.000	1.	1.000	1.000	€
34.000	7.	7.000	9.000	€
36.000	10.	19.000	27.000	€
38.000	30.	30.000	57.000	€
40.000	20.	22.000	79.000	€
42.000	15.	15.000	94.000	€
44.000	4.	4.000	78.000	€
46.000	2.	2.000	100.000	€
48.000				€
50.000				€
52.000				€
54.000				€
56.000				€
58.000				€
60.000				€
62.000				€
64.000				€
66.000				€
68.000				€
70.000				€
72.000				€
74.000				€
76.000				€
78.000				€
80.000				€
82.000				€
84.000				€
86.000				€
88.000				€
90.000				€
92.000				€
94.000				€
96.000				€
98.000				€
100.000				€

RENCE	RANGE
31.00	- 45.50 (CM)
12.20	- 17.91 (IN)

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM K= 0.250

2.000 -	3.000	2.500	0.	0.0	0.0	#####
3.000 -	4.000	3.500	3.	3.000	3.000	#####
4.000 -	5.000	4.500	8.	8.000	11.000	#####
5.000 -	6.000	5.500	7.	7.000	18.000	#####
6.000 -	7.000	6.500	7.	7.000	25.000	#####
7.000 -	8.000	7.500	9.	9.000	34.000	#####
8.000 -	9.000	8.500	8.	4.000	42.000	#####
9.000 -	10.000	9.500	5.	5.000	47.000	#####
10.000 -	11.000	10.500	12.	12.000	59.000	#####
11.000 -	12.000	11.500	13.	13.000	72.000	#####
12.000 -	13.000	12.500	8.	9.000	80.000	#####
13.000 -	14.000	13.500	2.	2.000	82.000	#####
14.000 -	15.000	14.500	4.	4.000	86.000	#####
15.000 -	16.000	15.500	2.	2.000	88.000	#####
16.000 -	17.000	16.500	0.	0.0	88.000	#####
17.000 -	18.000	17.500	4.	4.000	92.000	#####
18.000 -	19.000	18.500	3.	3.000	95.000	#####
19.000 -	20.000	19.500	1.	1.000	96.000	#####
20.000 -	21.000	20.500	0.	0.0	96.000	#####
21.000 -	22.000	21.500	3.	3.000	99.000	#####
22.000 -	23.000	22.500	0.	0.0	99.000	#####
23.000 -	24.000	23.500	1.	1.000	100.000	#####

(147) TRICEPS SKINFOLD

MEAN 10.83
STANDARO DEVIATION 4.51
0.43

SKEWNESS 0.76

KURTOSIS 0.21

RANGE 3.50 - 24.00 (MM)
0.14 - 0.94 (IN)

PERCENTILES

INCHES

MILLIMETERS

1ST 0.01

2ND 0.06

3RD 0.09

5TH 0.13

10TH 0.20

15TH 0.24

20TH 0.28

25TH 0.31

30TH 0.33

35TH 0.36

40TH 0.38

45TH 0.40

50TH 0.43

55TH 0.45

60TH 0.47

65TH 0.49

70TH 0.52

75TH 0.55

80TH 0.58

85TH 0.61

90TH 0.65

95TH 0.72

97TH 0.76

98TH 0.79

99TH 0.84

SCORE INTERVAL MIDPOINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM $\bar{x} = 0.380$

2.000	-	4.000	3.000	0.	0.0	0.0	XXXX
4.000	-	5.000	5.000	2.	2.000	2.000	XXXX
6.000	-	7.000	7.000	10.	10.000	12.000	XXXXXXXXXXXX
8.000	-	9.000	9.000	5.	5.000	17.000	XXXXXXXXXXXX
10.000	-	10.000	11.000	14.	14.000	31.000	XXXXXXXXXXXX
12.000	-	12.000	13.000	19.	19.000	50.000	XXXXXXXXXXXX
14.000	-	14.000	15.000	9.	9.000	59.000	XXXXXXXXXXXX
16.000	-	16.000	17.000	3.	3.000	62.000	XXXXXX
18.000	-	18.000	19.000	10.	10.000	72.000	XXXXXXXXXXXX
20.000	-	20.000	21.000	6.	6.000	78.000	XXXXXXXXXXXX
22.000	-	22.000	23.000	6.	6.000	84.000	XXXXXXXXXXXX
24.000	-	24.000	25.000	5.	5.000	89.000	XXXXXXXXXXXX
26.000	-	26.000	27.000	4.	4.000	93.000	XXXXXX
28.000	-	28.000	29.000	4.	4.000	97.000	XXXXXX
30.000	-	30.000	31.000	2.	2.000	99.000	XXXX
32.000	-	32.000	33.000	1.	1.000	100.000	XX

(48) SUBSCAPULAR SKINFOLD

MEAN 16.58 STANDARD DEVIATION 6.88 RANGE 6.00 - 33.00 (MM)
 0.65 SKEWNESS 0.27 KURTOSIS 0.24 - 1.30 (IN)

MILLIMETERS	PERCENTILES	INCHES
0.58	1ST	0.02
2.45	2ND	0.10
3.64	3RD	0.14
5.27	5TH	0.21
7.76	10TH	0.31
9.46	15TH	0.37
10.79	20TH	0.42
11.95	25TH	0.47
12.98	30TH	0.51
13.94	35TH	0.55
14.84	40TH	0.58
15.72	45TH	0.62
16.58	50TH	0.65
17.45	55TH	0.69
18.33	60TH	0.72
19.23	65TH	0.76
20.19	70TH	0.79
21.22	75TH	0.84
22.38	80TH	0.88
23.71	85TH	0.93
25.41	90TH	1.00
27.90	95TH	1.10
29.53	97TH	1.16
30.72	98TH	1.21
32.59	99TH	1.28

SIZE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT
0.0 - 2.000	1.000	1.	1.000	1.000
2.000 - 4.000	3.000	2.	2.000	3.000
4.000 - 6.000	5.000	11.	11.000	14.000
6.000 - 8.000	7.000	12.	12.000	26.000
8.000 - 10.000	9.000	13.	13.000	39.000
10.000 - 12.000	11.000	10.	10.000	49.000
12.000 - 14.000	13.000	17.	17.000	66.000
14.000 - 16.000	15.000	9.	9.000	75.000
16.000 - 18.000	17.000	6.	6.000	81.000
18.000 - 20.000	19.000	7.	7.000	88.000
20.000 - 22.000	21.000	3.	3.000	91.000
22.000 - 24.000	23.000	5.	5.000	96.000
24.000 - 26.000	25.000	3.	3.000	99.000
26.000 - 28.000	27.000	1.	1.000	100.000
28.000 - 30.000	29.000	0.	0.0	100.000
30.000 - 32.000	31.000	0.	0.0	100.000
32.000 - 34.000	33.000	0.	0.0	100.000
34.000 - 36.000	35.000	1.	1.000	101.000
36.000 - 38.000	37.000	0.	0.0	101.000
38.000 - 40.000	39.000	1.	1.000	102.000
40.000 - 42.000	41.000	1.	1.000	103.000

(49) MID-AXILLARY SKINFOLD			
MEAN	STANDARD DEVIATION	RANGE	
13.76	7.25	2.00 - 42.00 (MM)	
0.54	0.29	0.08 - 1.65 (IN)	
SKEWNESS		KURTOSIS	
1.29		2.45	
MILLIMETERS		PERCENTILES	INCHES
-3.11	1ST		-0.12
-1.14	2ND		-0.04
0.12	3RD		0.00
1.83	5TH		0.07
4.46	10TH		0.18
6.25	15TH		0.25
7.65	20TH		0.30
8.87	25TH		0.35
9.96	30TH		0.39
10.97	35TH		0.43
11.92	40TH		0.47
12.85	45TH		0.51
13.76	50TH		0.54
14.67	55TH		0.58
15.60	60TH		0.61
16.55	65TH		0.65
17.56	70TH		0.69
18.65	75TH		0.73
19.87	80TH		0.78
21.27	85TH		0.84
23.06	90TH		0.91
25.69	95TH		1.01
27.40	97TH		1.08
28.66	98TH		1.13
30.63	99TH		1.21

HISTUGRA4 X = 0.960

RELATIVE
PERCENT

PERCENT

FREQUENCY

IMCQ 014

SCREF INTERVAL[illegible]

(50) CHEST SKINFOLD (JUXTA-NIPPLE)

RANGE	
2.00 -	27.00 (MM)
0.08 -	1.06 (IN)

KURTOSIS

3.03INCHES

0.24
0.18
0.14
0.09
0.02
0.04
0.08
0.11
0.14
0.17
0.20
0.23
0.25
0.28
0.31
0.33
0.36
0.39
0.43
0.47
0.52
0.60
0.65
0.69
0.74

PERCENTILES

PERCENT

MEAN STAFF6.420.25

SKENNESS

1.99MILLIMETERS

6.00
4.55
3.63
2.36
0.42
0.89
1.93
2.82
3.63
4.37
5.07
5.75
6.42
7.10
7.78
8.48
9.22
0.03
0.92
1.96
3.27
5.21
6.49
7.40
8.85

SCORE INTERVAL MEAN POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM X= 0.450

0.0	-	1.000	0.500	0.	0.0	0.0	XXXXXXXXXXXXXXXXXXXXX
1.000	-	2.000	1.500	26.	26.000	26.000	XXXXXXXXXXXXXXXXXXXXX
2.000	-	3.000	2.500	42.	42.000	52.000	XXXXXXXXXXXXXXXXXXXXX
3.000	-	4.000	3.500	15.	15.000	67.000	XXXXXXXXXXXXXXXXXXXXX
4.000	-	5.000	4.500	7.	7.000	74.000	XXXXXXXXXXXX
5.000	-	6.000	5.500	1.	1.000	75.000	XXXXXX
6.000	-	7.000	6.500	6.	6.000	81.000	XXXXXXXXXX
7.000	-	8.000	7.500	0.	0.0	81.000	XXXXXX
8.000	-	9.000	8.500	1.	1.000	82.000	X
9.000	-	10.000	9.500	1.	1.000	83.000	X
10.000	-	11.000	10.500	1.	1.000	84.000	X

(51) BICEPS SKINFOLD
 STANDARD DEVIATION RANGE
 1.72 2.00 - 11.00 INH
 0.07 0.08 - 0.43 INH
 SKEWNESS KURTOSIS
 2.06 4.63

MILLIMETERS	PERCENTILES	INCHES
-0.57	1ST	-0.02
-0.10	2ND	-0.00
0.20	3RD	0.01
0.60	5TH	0.02
1.23	10TH	0.05
1.65	15TH	0.07
1.99	20TH	0.08
2.28	25TH	0.09
2.54	30TH	0.10
2.78	35TH	0.11
3.00	40TH	0.12
3.22	45TH	0.13
3.44	50TH	0.14
3.66	55TH	0.14
3.88	60TH	0.15
4.10	65TH	0.16
4.34	70TH	0.17
4.60	75TH	0.18
4.89	80TH	0.19
5.23	85TH	0.21
5.65	90TH	0.22
6.28	95TH	0.25
6.68	97TH	0.26
6.98	98TH	0.27
7.45	99TH	0.29

SCORE	INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\bar{x} = 0.460$
2.000	-	3.000	2.500	9.	9.000	XXXXXXXXXXXXXXX	
3.000	-	4.000	3.500	19.	19.000	XXXXXXXXXXXXXXXXXXXXXXX	
4.000	-	5.000	4.500	23.	23.000	XXXXXXXXXXXXXXXXXXXXXXXXXX	
5.000	-	6.000	5.500	13.	13.000	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
6.000	-	7.000	6.500	17.	17.000	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
7.000	-	8.000	7.500	4.	4.000	XXXXXXXXXX	
8.000	-	9.000	8.500	4.	4.000	XXXXXXXXXX	
9.000	-	10.000	9.500	5.	5.000	XXXXXXXXXXXX	
10.000	-	11.000	10.500	0.	0.0	XXXXXX	
11.000	-	12.000	11.500	3.	3.000	XXXXXX	
12.000	-	13.000	12.500	1.	1.000	XX	
13.000	-	14.000	13.500	1.	1.000	XX	
14.000	-	15.000	14.500	0.	0.0	XX	
15.000	-	16.000	15.500	1.	1.000	XX	

[52] FOREARM SKINFOLD			
MEAN	STANDARD DEVIATION	RANGE	
6.08	2.56	3.00 - 16.00 (MM)	
0.24	0.10	0.12 - 0.63 (IN)	
SKEWNESS		KURTOSIS	
1.39		2.10	
MILLIMETERS	PERCENTILES	INCHES	
0.13	1ST	0.01	
0.83	2ND	0.03	
1.27	3RD	0.05	
1.87	5TH	0.07	
2.80	10TH	0.11	
3.43	15TH	0.14	
3.93	20TH	0.15	
4.36	25TH	0.17	
4.74	30TH	0.19	
5.10	35TH	0.20	
5.43	40TH	0.21	
5.76	45TH	0.23	
6.08	50TH	0.24	
6.40	55TH	0.25	
6.73	60TH	0.26	
7.06	65TH	0.28	
7.42	70TH	0.29	
7.80	75TH	0.31	
8.23	80TH	0.32	
8.73	85TH	0.34	
9.36	90TH	0.37	
10.29	95TH	0.40	
10.69	97TH	0.43	
11.33	98TH	0.45	
12.03	99TH	0.47	

SCALE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM X = 0.420

0.0	-	5.000	1.	1.000	1.000	XX
5.000	-	10.000	7.	7.000	8.000	XXXXXXXXXXXXXX
10.000	-	15.000	8.	8.000	16.000	XXXXXXXXXXXXXX
15.000	-	20.000	14.	14.000	30.000	XXXXXXXXXXXXXX
20.000	-	25.000	21.	21.000	51.000	XXXXXXXXXXXXXX
25.000	-	30.000	18.	18.000	59.000	XXXXXXXXXXXXXX
30.000	-	35.000	9.	9.000	78.000	XXXXXXXXXXXXXX
35.000	-	40.000	8.	8.000	86.000	XXXXXXXXXXXXXX
40.000	-	45.000	8.	8.000	94.000	XXXXXXXXXXXXXX
45.000	-	50.000	3.	3.000	97.000	XXXXXX
50.000	-	55.000	2.	2.000	99.000	XXXX
55.000	-	60.000	1.	1.000	100.000	XX

153) ABDOMEN SKINFOLD		RANGE	
MEAN	26.58	STANDARD DEVIATION	5.00 - 58.00 (MM)
1.05		11.62	0.20 - 2.28 (IN)
SKEWNESS		KURTOSIS	
0.34		-0.32	
MILLIMETERS		PERCENTILES	
-0.43		INCHES	
2.73		1ST	-0.02
4.74		2ND	0.11
7.48		3RD	0.19
11.69		5TH	0.29
14.55		10TH	0.46
16.80		15TH	0.57
18.76		20TH	0.66
20.50		25TH	0.74
22.11		30TH	0.81
23.65		35TH	0.87
25.12		40TH	0.93
26.58		45TH	0.99
28.05		50TH	1.05
29.52		55TH	1.10
31.06		60TH	1.16
32.67		65TH	1.22
34.41		70TH	1.29
36.37		75TH	1.35
38.62		80TH	1.43
41.48		85TH	1.52
45.69		90TH	1.63
48.43		95TH	1.80
50.44		97TH	1.91
53.60		98TH	1.99
		99TH	2.11

HISTOGRAM X= 0.140

CUMULATIVE
PERCENT

PERCENT

FREQUENCY

WTD POINT

SCORE INTERVAL

3900.000	- 4000.000	3900.000	0.	0.	14.634	7.0	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
4000.000	- 4200.000	4100.000	5.	14.634	14.634	14.634	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
4200.000	- 4400.000	4300.000	0.	0.	21.951	21.951	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
4400.000	- 4500.000	4500.000	3.	7.317	29.259	29.259	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
4600.000	- 4800.000	4700.000	3.	7.317	36.576	36.576	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
4800.000	- 5000.000	4900.000	4.	9.756	46.332	46.332	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5000.000	- 5200.000	5100.000	7.	17.073	63.405	63.405	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5200.000	- 5400.000	5300.000	5.	12.135	75.539	75.539	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5400.000	- 5600.000	5500.000	5.	12.135	87.674	87.674	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5600.000	- 5800.000	5700.000	4.	9.756	97.430	97.430	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5800.000	- 6000.000	5900.000	2.	4.878	102.308	102.308	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6000.000	- 6200.000	6100.000	0.	0.	107.186	107.186	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6200.000	- 6400.000	6300.000	1.	2.439	109.625	109.625	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6400.000	- 6600.000	6500.000	0.	0.	112.064	112.064	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6600.000	- 6800.000	6700.000	0.	0.	114.503	114.503	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6800.000	- 7000.000	6900.000	0.	0.	116.942	116.942	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
7000.000	- 7200.000	7100.000	1.	2.439	119.381	119.381	XXXXXXXXXXXXXXXXXXXXXXXXXXXX

MEAN 5120.85
STANDARD DEVIATION 663.31
(SS) FORCED VITAL CAPACITY RANGE 999.00 - 7120.00 (ML)

KURTOSIS 0.45

PERCENTILES

SKENNESS 0.38

MILLILITERS

3577.99	1ST
3758.41	2ND
3873.17	3RD
4433.66	5TH
4562.34	10TH
4673.78	15TH
4773.27	20TH
4865.48	25TH
4953.03	30TH
5037.27	35TH
5120.85	40TH
5204.43	45TH
5288.67	50TH
5376.22	55TH
5468.43	60TH
5567.92	65TH
5679.36	70TH
5808.04	75TH
5971.21	80TH
6212.00	85TH
6368.54	90TH
6483.29	95TH
6568.54	97TH
6663.71	98TH
	99TH

SCALE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM X= 0.180

2400.000	- 2600.000	2500.000	0.	0.0	0.0	XXXX
2600.000	- 2800.000	2700.000	1.	2.439	2.439	XXXX
2800.000	- 3000.000	2900.000	1.	2.439	4.873	XXXX
3000.000	- 3200.000	3100.000	1.	2.439	7.317	XXXX
3200.000	- 3400.000	3300.000	9.	21.951	29.253	XXXXXXXXXXXXXXXXXXXX
3400.000	- 3600.000	3500.000	3.	7.317	36.585	XXXXXXXXXXXXXXXXXXXX
3600.000	- 3800.000	3700.000	2.	4.873	41.463	XXXXXXXXXXXXXXXXXXXX
3800.000	- 4000.000	3900.000	4.	9.756	51.219	XXXXXXXXXXXXXXXXXXXX
4000.000	- 4200.000	4100.000	5.	12.195	63.415	XXXXXXXXXXXXXXXXXXXX
4200.000	- 4400.000	4300.000	1.	2.439	65.854	XXXX
4400.000	- 4600.000	4500.000	4.	9.756	75.610	XXXXXXXXXXXXXXXXXXXX
4600.000	- 4800.000	4700.000	4.	9.756	85.355	XXXXXXXXXXXXXXXXXXXX
4800.000	- 5000.000	4900.000	3.	7.317	92.683	XXXXXXXXXXXXXXXXXXXX
5000.000	- 5200.000	5100.000	0.	0.0	92.683	XXXX
5200.000	- 5400.000	5300.000	2.	4.873	97.561	XXXX
5400.000	- 5600.000	5500.000	0.	0.0	97.561	XXXX
5600.000	- 5800.000	5700.000	0.	0.0	97.561	XXXX
5800.000	- 6000.000	5900.000	1.	2.439	100.000	XXXX

(56) FORCED EXPIRATORY VOLUME - 1 SECOND
MEAN 4022.68 STANDARD DEVIATION 740.58 RANGE 999.00 - 5940.00 (ML)

SKENNESS 0.37 KURTOSIS -0.60
MILLILITERS PERCENTILES

2300.10	1ST
2501.54	2ND
2629.66	3RD
3255.45	5TH
3399.12	10TH
3523.53	15TH
3634.62	20TH
3737.56	25TH
3835.32	30TH
3929.37	35TH
4022.68	40TH
4115.99	45TH
4210.05	50TH
4307.80	55TH
4410.74	60TH
4521.83	65TH
4646.25	70TH
4789.92	75TH
4972.10	80TH
5240.93	85TH
5415.71	90TH
5543.82	95TH
5745.26	98TH
	99TH

SCALE INTERVAL	MID POINT	FREQUENCY	PERCENT	CUMULATIVE PERCENT	HISTOGRAM	$\bar{x} = 0.420$
1.025 -	1.030	0.	0.0	0.0		
1.030 -	1.035	1.	1.000	1.000	xx	
1.035 -	1.040	1.	1.000	2.000	xx	
1.040 -	1.045	2.	2.000	4.000	xxxx	
1.045 -	1.050	5.	5.000	9.000	xxxxxxxxxx	
1.050 -	1.055	9.	9.000	18.000	xxxxxxxxxxxxxx	
1.055 -	1.060	11.	11.000	29.000	xxxxxxxxxxxxxxxxxx	
1.060 -	1.065	21.	21.000	50.000	xxxxxxxxxxxxxxxxxxxxxx	
1.065 -	1.070	17.	17.000	67.000	xxxxxxxxxxxxxxxxxxxxxx	
1.070 -	1.075	13.	13.000	80.000	xxxxxxxxxxxxxxxxxxxxxx	
1.075 -	1.080	13.	13.000	93.000	xxxxxxxxxxxxxxxxxxxxxx	
1.080 -	1.085	2.	2.000	95.000	xxxx	
1.085 -	1.090	5.	5.000	100.000	xxxxxxxxxxxxxx	

MEAN	(57) SPECIFIC GRAVITY	RANGE
1.0652	STANDARD DEVIATION	1.0339 - 1.0886
	0.0113	
	SKEWNESS	KURTOSIS
	-0.25	-0.11
	SPECIFIC GRAVITY	PERCENTILES
	1.0390	1ST
	1.0420	2ND
	1.0440	3RD
	1.0535	5TH
	1.0557	10TH
	1.0576	15TH
	1.0593	20TH
	1.0609	25TH
	1.0624	30TH
	1.0638	35TH
	1.0652	40TH
	1.0667	45TH
	1.0681	50TH
	1.0696	55TH
	1.0712	60TH
	1.0728	65TH
	1.0747	70TH
	1.0769	75TH
	1.0797	80TH
	1.0838	85TH
	1.0865	90TH
	1.0884	95TH
	1.0884	97TH
	1.0884	98TH
	1.0915	99TH

SCHE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT HISTOGRAM X = 0.340

3.000	5.000	4.000	0.	0.0	0.0	XXXXXXXXXXXXX
5.000	7.000	6.000	5.	5.000	5.000	XXXXX
7.000	9.000	8.000	2.	2.000	7.000	XXXXXXXXXXXXX
9.000	11.000	10.000	10.	10.000	17.000	XXXXXXXXXXXXX
11.000	13.000	12.000	14.	14.000	31.000	XXXXXXXXXXXXX
13.000	15.000	14.000	8.	9.000	39.000	XXXXXXXXXXXXX
15.000	17.000	15.000	15.	15.000	54.000	XXXXXXXXXXXXX
17.000	19.000	18.000	17.	17.000	71.000	XXXXXXXXXXXXX
19.000	21.000	20.000	9.	9.000	80.000	XXXXXXXXXXXXX
21.000	23.000	22.000	8.	8.000	88.000	XXXXXXXXXXXXX
23.000	25.000	24.000	5.	5.000	93.000	XXXXXXXXXXXXX
25.000	27.000	26.000	4.	4.000	97.000	XXXXX
27.000	29.000	28.000	1.	1.000	98.000	XXXXX
29.000	31.000	30.000	1.	1.000	99.000	XXXXX
31.000	33.000	32.000	1.	1.000	100.000	XXXXX

MEAN 16.46
 STANDARD DEVIATION 5.55
 TOTAL BODY FAT (PERCENT) RANGE 5.20 - 32.18

SKEMNESS 0.30
 KURTOSIS -0.08

(PERCENT BODY WGT)	PERCENTILES
3.55	1ST
5.06	2ND
6.02	3RD
10.71	5TH
11.78	10TH
12.72	15TH
13.55	20TH
14.32	25TH
15.05	30TH
15.76	35TH
16.46	40TH
17.16	45TH
17.86	50TH
18.59	55TH
19.37	60TH
20.20	65TH
21.13	70TH
22.21	75TH
23.57	80TH
25.59	85TH
26.90	90TH
27.86	95TH
28.80	97TH
29.86	98TH
29.87	99TH

SCORE INTERVAL MID POINT FREQUENCY PERCENT CUMULATIVE PERCENT

1.400 -	1.500	1.450	0.	0.	0.
1.500 -	1.600	1.550	1.	1.000	1.000
1.600 -	1.700	1.650	2.	2.000	2.000
1.700 -	1.800	1.750	10.	12.000	12.000
1.800 -	1.900	1.850	15.	15.000	15.000
1.900 -	2.000	1.950	38.	33.000	33.000
2.000 -	2.100	2.050	15.	15.000	37.200
2.100 -	2.200	2.150	11.	11.000	31.200
2.200 -	2.300	2.250	7.	7.000	24.200
2.300 -	2.400	2.350	1.	1.000	23.200
2.400 -	2.500	2.450	1.	1.000	22.200

MEAN	1.97	(59) BODY SURFACE AREA	RANGE	1.59 - 2.42 (M2)
		STANDARD DEVIATION		
		0.14		
			KURTOSIS	0.32
			PERCENTILES	
			1ST	
			2ND	
			3RD	
			5TH	
			10TH	
			15TH	
			20TH	
			25TH	
			30TH	
			35TH	
			40TH	
			45TH	
			50TH	
			55TH	
			60TH	
			65TH	
			70TH	
			75TH	
			80TH	
			85TH	
			90TH	
			95TH	
			97TH	
			98TH	
			99TH	

APPENDIX C

[illegible]

DECIMAL POINTS OMITTED
BASED ON N = 41

APPENDIX D

APPENDIX D-1

MULTIPLE REGRESSION FORMULAE FOR ESTIMATING ANTHROPOMETRIC VARIABLES FROM PRIMARY FACTOR VARIABLES

Variable	Formula	SE	R
1. Weight	= $3.7X_{42}-31.2$	6.43	.82
	= $3.6X_{42}+.77X_{40}-110.0$	5.23	.89
	= $3.3X_{42}+.72X_{40}+1.42X_{40}-178.4$	4.72	.91
2. Height	= $1.1X_{40}+59.0$	2.66	.89
	= $1.1X_{40}+.6X_{40}+27.0$	2.47	.91
	= $1.1X_{40}+.64X_{40}-1.1X_{35}+32.1$	2.45	.92
3. Supra Sternal Height	= $.98X_{40}+38.34$	2.31	.90
	= $.97X_{40}+.39X_{40}+17.34$	2.22	.91
	= $.97X_{40}+.38X_{40}+.05X_{50}+18.03$	2.22	.91
* 4. ASIS Height	= $1.02X_{50}+57.41$	4.01	.58
	= $.99X_{50}+2.3X_{22}+46.08$	3.96	.60
	= $1.0X_{50}+2.5X_{22}-1.7X_{35}+53.4$	3.92	.62
* 5. Tibiale Height	= $.3X_{40}+13.46$	2.29	.58
	= $.34X_{40}+.65X_{35}+9.52$	2.28	.59
	= $.34X_{40}+.80X_{35}-.48X_{34}+13.25$	2.28	.59
6. Lower Leg Length	= $.89X_{50}-3.14$	1.24	.89
	= $.83X_{50}+.05X_{40}-6.22$	1.23	.90
	= $.83X_{50}+.07X_{40}-.70X_{22}-3.43$	1.22	.90
7. Biacrom. Diam	= $.30X_{42}+32.81$	1.78	.39
	= $.29X_{42}+.10X_{40}+22.70$	1.72	.47
	= $.24X_{42}+.09X_{40}+.27X_{40}+9.59$	1.68	.52
8. Bi-iliocrystal Diam	= $.32X_{42}+19.19$	1.37	.50
	= $.30X_{42}+.13X_{40}+6.19$	1.22	.64
	= $.28X_{42}+.11X_{40}+1.07X_{22}+2.61$	1.18	.68
9. Transverse Chest	= $.42X_{42}+17.92$	1.50	.57
	= $.36X_{42}+.30X_{40}+2.38$	1.42	.63
	= $.35X_{42}+.26X_{40}+.98X_{22}-.357$	1.39	.66
10. A-P Chest	= $.39X_{42}+9.73$	1.29	.61
	= $.38X_{42}+.06X_{40}+3.57$	1.27	.63
	= $.38X_{42}+.06X_{40}-.68X_{36}+4.33$	1.25	.65

APPENDIX D-1 (cont.)

Variable	Formula	SE	R
11. Chest Circum.	= $1.86X_{42} + 41.55$	3.82	.77
	= $1.73X_{42} + .72X_{40} + 4.69$	3.66	.80
	= $1.72X_{42} + .74X_{40} - 1.54X_{36} + 5.87$	3.63	.80
12. Abd. Circum.	= $2.40X_{42} + 16.86$	5.34	.75
	= $2.35X_{42} + .31X_{40} - 14.82$	5.35	.76
	= $2.22X_{42} + .29X_{40} + .74X_{40} - 50.61$	5.24	.77
13. Thigh Circum.	= $1.43X_{42} + 14.57$	2.68	.80
	= $1.34X_{42} + .49X_{40} - 10.61$	2.57	.82
	= $1.41X_{42} + .56X_{40} - 2.19X_{31} - 8.27$	2.47	.84
14. Ankle Circum.	= $.42X_{40} - .71$	1.42	.45
	= $.34X_{40} + .21X_{42} - 2.24$	1.33	.55
	= $.29X_{40} + .19X_{42} + 1.28X_{22} - 5.79$	1.26	.61
15. Sitting Height	= $.30X_{40} + 58.25$	2.86	.47
	= $.28X_{40} + .68X_{40} + 22.53$	2.64	.58
	= $.25X_{40} + .60X_{40} + 1.97X_{22} + 19.02$	2.57	.62
16. Bicondylar Femur	= $.65X_{22} + 6.05$	.65	.33
	= $.58X_{22} + .35X_{27} + 2.14$	.62	.43
	= $.56X_{22} + .35X_{27} - .02X_{50} + 2.37$	.61	.47
17. Buttock-Knee Length	= $.45X_{40} + 10.89$	1.56	.82
	= $.45X_{40} + .19X_{42} + 5.80$	1.49	.84
	= $.44X_{40} + .16X_{42} + .19X_{40} - 3.16$	1.47	.85
18. Total Arm Length	= $.58X_{40} + 13.09$	1.94	.83
	= $.59X_{40} + 1.13X_{35} + 6.21$	1.89	.84
	= $.57X_{40} + 1.0X_{35} + 1.06X_{22} + 2.87$	1.87	.85
19. Upper Arm Length	= $.26X_{40} + 3.60$	1.40	.68
	= $.22X_{40} + .13X_{50} + 1.90$	1.37	.70
	= $.23X_{40} + .12X_{50} + .41X_{35} - .49$	1.37	.70
20. Forearm Length	= $.22X_{40} + 3.52$	1.34	.68
	= $.17X_{40} + .15X_{50} + 1.51$	1.09	.72
	= $.15X_{40} + .15X_{50} + .72X_{22} - 1.38$	1.07	.74
21. Bicondylar Humerus	= $.07X_{42} + 4.75$	.36	.47
	= $.07X_{42} + .42X_{22} + 2.75$	.33	.59
	= $.06X_{42} + .38X_{22} + .01X_{40} + 1.50$	.32	.61
*22. Wrist Breadth	= $.04X_{40} + 2.90$	.34	.22
	= $.04X_{40} + .01X_{40} + 1.78$	.33	.28
	= $.03X_{40} + .01X_{40} + .17X_{31} + 1.45$	.33	.33

APPENDIX D-1 (cont.)

Variable		Formula	SE	R
23. Hand Breadth	=	$.49X_{22}+5.73$	0.37	.42
	=	$.44X_{22}+.02X_4+3.99$	0.36	.48
	=	$.40X_{22}+.02X_4+.03X_{42}+3.34$	0.35	.51
24. Head Length	=	$.34X_{40}+.455$	0.46	.78
	=	$.34X_{40}+.19X_{36}+.31$	0.46	.78
	=	$.35X_{40}+.19X_{36}-.13X_{34}+1.06$	0.46	.79
25. Head Breadth	=	$.20X_{40}+3.75$	0.52	.55
	=	$.21X_{40}-.38X_{36}+4.03$	0.51	.59
	=	$.19X_{40}-.37X_{36}+.25X_{34}+2.56$	0.49	.63
26. Bizygomatic Diameter	=	$.62X_{34}+6.68$	0.73	.43
	=	$.54X_{34}+.07X_{42}+5.36$	0.72	.48
	=	$.52X_{34}+.06X_{42}+.37X_{31}+4.55$	0.71	.50
*27. Nasion-Gnathion	=	$.11X_{40}+5.71$	0.52	.35
	=	$.11X_{40}+.31X_{36}+5.48$	0.51	.40
	=	$.10X_{40}+.30X_{36}+.01X_4+4.32$	0.51	.42
28. Nose Height	=	$.25X_{40}+2.24$	0.33	.39
	=	$.29X_{40}-.30X_{36}+2.18$	0.32	.49
	=	$.28X_{40}-.27X_{36}+.16X_{22}+1.47$	0.31	.51
29. Nose Breadth	=	$.39X_{35}+1.33$	0.30	.48
	=	$.37X_{35}+.04X_{40}-1.02$	0.29	.52
	=	$.38X_{35}+.05X_{40}-.01X_{42}-.97$	0.29	.53
30. Ear Length	=	$.73X_{31}+3.58$	0.44	.52
	=	$.67X_{31}+.06X_{40}+.33$	0.43	.55
	=	$.65X_{31}+.05X_{40}+.18X_{22}-.17$	0.42	.57
*31. Ear Breadth	=	$.28X_{35}+2.35$	0.34	.32
	=	$.25X_{35}+.03X_{42}+1.53$	0.33	.39
	=	$.27X_{35}+.03X_{42}-.01X_{50}+1.47$	0.33	.43
32. Upper Face Height	=	$.30X_{40}+1.22$	1.17	.40
	=	$.31X_{40}-.50X_{35}+3.09$	1.16	.43
	=	$.33X_{40}-.46X_{35}-.05X_{42}+3.33$	1.16	.44
33. Minimum Frontal Diameter	=	$.50X_{34}+6.20$	0.74	.35
	=	$.41X_{34}+.08X_{42}+4.72$	0.72	.43
	=	$.37X_{34}+.07X_{42}+.07X_{40}+1.39$	0.71	.45

APPENDIX D-1 (cont.)

Variable	Formula	SE	R
*34. Bigonial Diameter	= .09X ₄₀ +5.90	0.54	.26
	= .08X ₄₀ +.26X ₃₅ +4.92	0.53	.32
	= .06X ₄₀ +.23X ₃₅ +.04X ₄₂ +4.76	0.53	.36
*35. Mouth Width	= .36X ₃₁ +3.82	0.38	.32
	= .33X ₃₁ +.13X ₃₄ +2.56	0.38	.36
	= .35X ₃₁ +.14X ₃₄ -.10X ₂₇ +3.63	0.38	.39
*36. Lip Thickness	= .15X ₂₇ -.22	0.36	.23
	= .16X ₂₇ -.17X ₂₂ +.55	0.35	.28
	= .16X ₂₇ -.18X ₂₂ +.01X ₅ +.18	0.36	.29
37. Head Height	= .25X ₄₀ +.23	0.63	.55
	= .27X ₄₀ -.07X ₄₂ +.70	0.61	.59
	= .27X ₄₀ -.07X ₄₂ +.04X ₅ -1.03	0.61	.60
38. Ankle Breadth	= .53X ₂₂ +4.52	0.35	.47
	= .49X ₂₂ +.18X ₂₇ +2.52	0.33	.53
	= .45X ₂₂ +.16X ₂₇ +.03X ₄₂ +1.94	0.32	.57
39. Foot Length	= .18X ₄ +7.47	1.07	.63
	= .18X ₄ +.95X ₃₁ +3.24	1.02	.68
	= .18X ₄ +.85X ₃₁ +.10X ₄₀ -1.65	1.01	.69
*40. Head Circumference	= 1.05X ₂₇ +44.25	1.58	.35
	= .94X ₂₇ +.15X ₄₂ +40.88	1.54	.41
	= .54X ₂₇ +.12X ₄₂ +.54X ₃₄ +36.48	1.52	.45
41. Neck Circumference	= .51X ₄₂ +23.36	1.62	.62
	= .48X ₄₂ +1.28X ₂₂ +17.27	1.57	.65
	= .50X ₄₂ +1.34X ₂₂ -.12X ₅ +22.44	1.54	.67
*42. Upper Arm Relax Circumference	= .40X ₄₀ +7.30	2.41	.27
	= .34X ₄₀ +1.52X ₃₁ +5.32	2.36	.35
	= .28X ₄₀ +1.42X ₃₁ +.75X ₃₄ +1.03	2.34	.38
43. Upper Arm Contr. Circumference	= .99X ₄₂ +3.67	1.01	.93
	= 1.01X ₄₂ -.47X ₃₁ +4.92	1.01	.93
	= 1.01X ₄₂ -.42X ₃₁ +.02X ₅₀ +4.80	1.01	.93
44. Forearm Circumference	= .54X ₄₂ +11.28	1.03	.80
	= .52X ₄₂ +.94X ₂₂ +6.83	.99	.82
	= .50X ₄₂ +.82X ₂₂ +.14X ₄₀ +.41	.97	.83

APPENDIX D-1 (cont.)

Variable	Formula	SE	R
45. Wrist Circumference	$= .21X_{42}+10.84$ $= .18X_{42}+1.12X_{22}+5.55$ $= .18X_{42}+1.05X_{22}+.07X_{40}+2.19$	0.78 0.68 0.68	.57 .70 .71
46. Calf Circumference	$= .76X_{42}+14.68$ $= .70X_{42}+.36X_{40}-3.85$ $= .70X_{42}+.34X_{40}+1.33X_{36}-4.87$	2.06 1.98 1.93	.68 .71 .73
47. Triceps S.F.	$= 1.05X_{42}-21.19$ $= 1.02X_{42}+.18X_{50}-21.32$ $= 1.0X_{42}+.18X_{50}+.15X_{40}-37.14$	3.69 3.58 3.52	.58 .62 .64
48. Subscapular S.F.	$= 1.88X_{42}-40.58$ $= 1.80X_{42}+.43X_{50}-40.88$ $= 1.66X_{42}+.40X_{50}+.80X_{40}-82.01$	5.07 4.55 4.38	.68 .76 .78
49. Mid Axillary S.F.	$= 1.85X_{42}-42.55$ $= 1.79X_{42}+.37X_{50}-42.81$ $= 1.73X_{42}+.37X_{50}+1.72X_{27}-62.1$	5.63 5.30 5.24	.64 .69 .70
*50. Chest S.F.	$= -2.0X_{31}+14.07$ $= -2.76X_{31}+2.13X_{35}+5.96$ $= -3.16X_{31}+2.04X_{35}+.44X_{40}-17.02$	5.32 5.29 5.26	.13 .20 .24
51. Biceps S.F.	$= .21X_{50}+2.10$ $= .21X_{50}+.35X_{36}+1.53$ $= .21X_{50}+.33X_{36}+.06X_{40}-1.80$	1.33 1.33 1.33	.64 .65 .65
52. Forearm S.F.	$= .38X_{42}-5.57$ $= .36X_{42}+.13X_{50}-5.67$ $= .32X_{42}+.14X_{50}+1.60X_{22}-13.25$	2.38 2.29 2.23	.37 .47 .51
53. Abdomen S.F.	$= 3.23X_{42}-71.56$ $= 3.13X_{42}+.55X_{50}-71.95$ $= 3.13X_{42}+.55X_{50}-4.02X_{36}-65.44$	8.42 7.94 7.84	.69 .74 .75
54. Suprailiac S.F.	$= .38X_{50}+4.90$ $= .36X_{50}+.55X_{42}-11.74$ $= .37X_{50}+.61X_{42}-.41X_{50}+6.29$	4.64 4.45 4.33	.41 .49 .54
57. Specific Gravity	$= -.004X_{42}+1.18$ $= -.004X_{42}+.001X_{40}+1.13$ $= -.004X_{42}+.001X_{40}-.001X_{40}+1.17$	.006 .006 .006	.83 .86 .87

APPENDIX D-1 (cont.)

Variable	Formula	SE	R
58. Percent Body Fat	$= 1.85X_{42} - 39.80$	3.11	.83
	$= 1.89X_{42} - .26X_4 - 12.90$	2.84	.86
	$= 1.81X_{42} - .28X_4 + .44X_{40} - 34.10$	2.77	.87
59. Body Surface Area	$= .04X_{42} + .75$	0.10	.70
	$= .04X_{42} + .02X_4 - .97$	0.06	.90
	$= .03X_{42} + .02X_4 + .02X_{40} - 1.91$	0.06	.93

* = FACTOR SELECTED FOR REGRESSION ANALYSIS

APPENDIX D-2

MULTIPLE REGRESSION FORMULAE FOR ESTIMATING ANTHROPOMETRIC VARIABLES FROM COMMON FACTOR VARIABLES

Variable	Formula	SE	R
* 1. Weight	= $1.2X_{48}+62.4$	7.98	.71
	= $1.1X_{48}+.68X_2-55.5$	6.93	.79
	= $.83X_{48}+.64X_2+3.94X_{45}-113.2$	6.10	.85
* 2. Height	= $1.2X_5+120.0$	5.07	.54
	= $.98X_5+.19X_1+112.4$	4.62	.64
	= $.95X_5+.31X_1-.26X_{48}+108.9$	4.51	.68
3. Supra Sternal Height	= $.86X_2-7.1$	1.53	.96
	= $.85X_2+.71X_{29}-9.1$	1.52	.96
	= $.87X_2+.91X_{29}-.16X_{40}-2.7$	1.51	.96
4. ASIS Height	= $.73X_2-22.4$	2.18	.90
	= $.77X_2-.40X_{40}-4.8$	2.09	.91
	= $.78X_2-.65X_{40}+1.1X_{25}-10.9$	2.02	.91
* 5. Tibiale Height	= $.25X_2+4.6$	2.37	.54
	= $.27X_2-.20X_{40}+13.6$	2.35	.55
	= $.26X_2-.25X_{40}+.03X_{48}+16.2$	2.36	.56
6. Lower Leg Length	= $.89X_5-3.1$	1.24	.89
	= $.84X_5+.04X_2-8.4$	1.23	.90
	= $.83X_5+.05X_2-.67X_{28}-6.3$	1.21	.90
7. Biacrom. Diameter	= $.09X_1+34.4$	1.63	.54
	= $.08X_1+.05X_2+26.1$	1.61	.56
	= $.07X_1+.06X_2+.45X_{25}+18.6$	1.60	.58
8. Bi-iliocrystal Diameter	= $.10X_1+20.3$	1.05	.75
	= $.09X_1+.05X_2+12.6$	1.02	.77
	= $.08X_1+.06X_2+.33X_{25}+7.1$	1.01	.78
9. Transverse Chest	= $.12X_1+21.2$	1.28	.72
	= $.10X_1+.82X_{25}+9.9$	1.19	.76
	= $.12X_1+.88X_{25}-.05X_{48}+8.2$	1.17	.77
10. A-P Chest	= $.10X_1+13.6$	1.19	.68
	= $.11X_1-.05X_2+21.22$	1.16	.70
	= $.11X_1-.08X_2+.11X_5+20.8$	1.14	.72

APPENDIX D-2 (cont.)

Variable	Formula	SE	R
11. Chest Circum.	= $.45X_1 + 61.3$	3.22	.84
	= $.52X_1 - .28X_2 + 105.6$	2.86	.88
	= $.49X_1 - .26X_2 + 1.0X_{25} + 88.6$	2.81	.89
12. Abd. Circum.	= $.61X_1 + 40.2$	4.42	.84
	= $.45X_1 + .38X_{48} + 47.2$	4.04	.87
	= $.51X_1 + 38X_{48} - 1.3X_{45} + 64.26$	3.95	.88
13. Thigh Circum.	= $.34X_1 + 29.9$	2.20	.87
	= $.40X_1 - .21X_2 + 62.2$	1.91	.91
	= $.40X_1 - .22X_2 - .93X_{31} - 66.7$	1.89	.91
14. Ankle Circum.	= $.08X_1 + 16.2$	1.25	.62
	= $.06X_1 + .49X_{45} + 9.7$	1.19	.66
	= $.09X_1 + .50X_{45} - .06X_{48} + 8.4$	1.16	.69
15. Sitting Height	= $.39X_2 + 22.9$	2.25	.72
	= $.47X_2 - .34X_5 + 24.5$	2.12	.76
	= $.45X_2 - .32X_5 + .80X_{45} + 13.4$	1.90	.79
16. Bicondylar Femur	= $.02X_1 + 7.7$	.63	.38
	= $.02X_1 + .25X_{28} + 6.5$	.63	.41
	= $.03X_1 + .21X_{28} - .02X_{48} + 6.4$	.63	.42
17. Buttock-Knee Length	= $.36X_2 - 3.4$	1.68	.79
	= $.31X_2 + .05X_1 + .34$	1.61	.81
	= $.30X_2 + .07X_1 - .32X_{45} + 6.0$	1.60	.82
18. Total Arm Length	= $.44X_2 - 1.4$	2.26	.76
	= $.36X_2 + .29X_5 - 2.8$	2.16	.78
	= $.36X_2 + .29X_5 + .83X_{25} - 15.1$	2.11	.80
19. Upper Arm Length	= $.21X_2 - 4.3$	1.46	.65
	= $.16X_2 + .16X_5 - 5.1$	1.41	.68
	= $.17X_2 + .16X_5 - .54X_{29} - 3.5$	1.41	.68
20. Forearm Length	= $.17X_2 - 4.0$	1.15	.67
	= $.13X_2 + .17X_5 - 4.7$	1.09	.72
	= $.13X_2 + .17X_5 + .43X_{21} - 6.1$	1.08	.72
21. Bicondylar Humerus	= $.02X_1 + 5.5$	.34	.54
	= $.01X_1 + .09X_{45} + 4.3$	.33	.56
	= $.02X_1 + .07X_{45} - .01X_{48} + 4.1$	.33	.58
22. Wrist Breadth	= $.18X_{45} + 2.31$	.30	.49
	= $.17X_{45} + .01X_2 + .5$	.30	.53
	= $.17X_{45} + .01X_2 - .15X_{36} + .6$	.29	.55

APPENDIX D-2 (cont.)

Variable	Formula	SE	R
23. Hand Breadth	= .01X ₁ +7.2	.37	.41
	= .03X ₁ -.03X ₄₈ +6.7	.35	.51
	= .02X ₁ -.03X ₄₈ +.07X ₄₅ +5.8	.35	.53
24. Head Length	= .31X ₄₀ +.5	.46	.78
	= .42X ₄₀ -.41X ₂₅ +2.0	.41	.83
	= .44X ₄₀ -.39X ₂₅ -.01X ₄₈ +1.1	.41	.83
*25. Head Breadth	= .20X ₄₀ +3.7	.52	.55
	= .21X ₄₀ -.38X ₃₆ +4.0	.51	.59
	= .19X ₄₀ -.36X ₃₆ +.35X ₃₁ +3.6	.50	.62
26. Bizygomatic Diameter	= .68X ₂₅ +2.8	.69	.53
	= .70X ₂₅ -.43X ₂₉ +4.0	.68	.56
	= .64X ₂₅ -.45X ₂₉ +.01X ₁ +4.3	.67	.57
27. Nasion-Gnathion	= .60X ₂₈ +9.0	.51	.39
	= .69X ₂₈ +.48X ₃₆ +7.8	.48	.50
	= .59X ₂₆ +.44X ₃₆ +.07X ₄₀ +4.2	.47	.54
*28. Nose Height	= .06X ₄₀ +2.1	.35	.27
	= .06X ₄₀ -.21X ₃₆ +2.1	.34	.34
	= .05X ₄₀ -.23X ₃₆ +.01X ₂ +1.1	.34	.38
*29. Nose Breadth	= .05X ₄₀ +.38	.32	.27
	= .05X ₄₀ +.08X ₃₁ +.27	.32	.28
	= .06X ₄₀ +.11X ₃₁ -.06X ₂₅ +.46	.32	.29
30. Ear Length	= .73X ₃₁ +3.6	.44	.52
	= .72X ₃₁ +.02X ₄₈ +3.3	.42	.57
	= .73X ₃₁ +.02X ₄₈ +.01X ₂ +1.3	.42	.59
*31. Ear Breadth	= .18X ₂₅ +1.0	.34	.32
	= .18X ₂₅ +.12X ₂₉ +.68	.34	.34
	= .16X ₂₅ +.11X ₂₉ +.03X ₄₅ +.41	.34	.35
32. Upper Face Height	= .30X ₄₀ +1.2	1.17	.40
	= .32X ₄₀ -.52X ₃₁ +1.9	1.16	.42
	= .36X ₄₀ -.53X ₃₁ -.02X ₄₈ +.28	1.16	.43
33. Minimum Frontal Diameter	= .61X ₂₅ +2.1	.69	.49
	= .50X ₂₅ +.03X ₄₈ +3.4	.66	.55
	= .50X ₂₅ +.03X ₄₈ -.03X ₅ +5.1	.66	.56

APPENDIX D-2 (cont.)

Variable		Formula	SE	R
34. Bigonial Diameter	=	$.31X_{25}+6.0$	.52	.35
	=	$.24X_{25}+.01X_1+6.2$	.51	.41
	=	$.26X_{25}+.02X_1-.10X_{45}+7.3$	.51	.43
35. Mouth Width	=	$.57X_{29}+3.3$	.36	.48
	=	$.53X_{29}+.29X_{31}+2.3$	.34	.54
	=	$.54X_{29}+.28X_{31}-.01X_2+4.1$	.34	.56
*36. Lip Thickness	=	$-.20X_{28}+2.7$	.36	.26
	=	$-.19X_{28}-.10X_{25}+4.1$	.36	.26
	=	$-.26X_{28}-.20X_{25}+.07X_{40}+2.0$	.35	.37
37. Head Height	=	$.25X_{40}+.23$	.63	.55
	=	$.28X_{40}-.02X_{48}-1.5$	.62	.58
	=	$.25X_{40}-.02X_{48}+.04X_5-3.3$	.61	.60
38. Ankle Breadth	=	$.19X_{45}+4.1$	.35	.45
	=	$.17X_{45}+.02X_2+1.3$	.33	.53
	=	$.16X_{45}+.02X_2+.23X_{28}+.73$	.33	.57
39. Foot Length	=	$.15X_2+.47$	1.06	.64
	=	$.15X_2+.89X_{31}-3.4$	1.02	.68
	=	$.14X_2+.84X_{31}+.46-4.6$	1.01	.69
*40. Head Circumference	=	$1.57X_{25}+34.3$	1.41	.55
	=	$1.19X_{25}+.04X_1+35.2$	1.34	.64
	=	$1.15X_{25}+.04X_1+1.00X_{29}+32.6$	1.31	.64
41. Neck Circumference	=	$.12X_1+29.0$	1.56	.66
	=	$.14X_1-.09X_2+43.4$	1.49	.70
	=	$.14X_1-.09X_2+1.2X_{29}+39.8$	1.43	.72
42. Upper Arm Relax Circumference	=	$.18X_1+15.5$	1.43	.82
	=	$.21X_1-.13X_2+36.6$	1.24	.87
	=	$.22X_1-.13X_2-.99X_{28}+40.0$	1.19	.88
43. Upper Arm Contr. Circumference	=	$.19X_1+18.6$	1.65	.79
	=	$.22X_1-.13X_2+39.4$	1.50	.83
	=	$.24X_1-.15X_2-.74X_{25}+51.7$	1.44	.85
44. Forearm Circumference	=	$.12X_1+18.4$	1.10	.76
	=	$.09X_1+.59X_{45}+10.5$	1.01	.81
	=	$.11X_1+.50X_{45}-.06X_2+21.7$	.96	.83

APPENDIX D-2 (cont.)

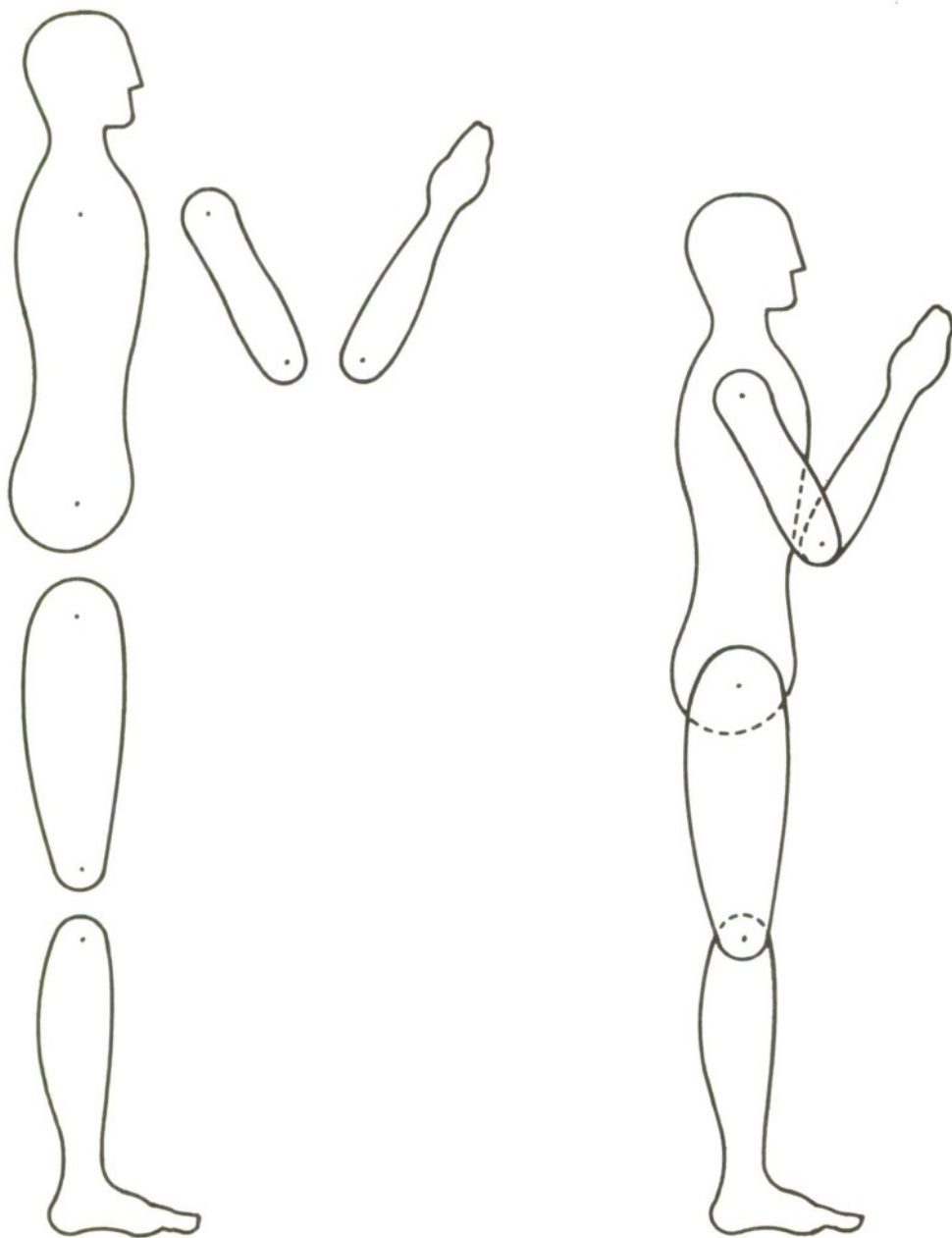
Variable		Formula	SE	R
*45.	Wrist	= $.05X_1+13.3$	.76	.60
	Circumference	= $.06X_1-.03X_2+17.8$	.74	.62
		= $.06X_1-.03X_2+.27X_{28}+16.9$	.74	.63
46.	Calf	= $.19X_1+22.6$	1.84	.75
	Circumference	= $.20X_1-.21X_5+32.2$	1.76	.78
		= $.20X_1-.24X_5+1.59X_{36}+30.5$	1.67	.81
47.	Triceps S.F.	= $.41X_{48}+4.0$	3.54	.62
		= $.27X_{48}+.12X_1-3.7$	3.42	.66
		= $.27X_{48}+.17X_1-.93X_{45}+8.7$	3.36	.68
*48.	Subscapular	= $.43X_1-18.7$	4.89	.71
	S.F.	= $.49X_1-.25X_2+20.1$	4.73	.73
		= $.47X_1-.26X_2+.46X_{40}-1.8$	4.70	.74
49.	Mid	= $.76X_{48}+.89$	4.94	.74
	Axillary S.F.	= $.60X_{48}+.15X_1+8.5$	4.82	.75
		= $.61X_{48}+.21X_1-1.14X_{45}+6.8$	4.76	.76
50.	Chest	S.F. = $.30X_{48}+1.4$	4.95	.39
		= $.45X_{48}-.13X_1+9.3$	4.87	.43
		= $.47X_{48}-.11X_1-1.29X_{25}+27.3$	4.84	.45
51.	Biceps	S.F. = $.10X_{48}+1.9$	1.60	.38
		= $.11X_{48}-.57X_{25}+10.3$	1.57	.43
		= $.11X_{48}-.59X_{25}+.67X_{29}+8.5$	1.57	.45
52.	Forearm	S.F. = $.22X_{48}+2.4$	2.06	.60
		= $.23X_{48}-.16X_5+10.2$	2.02	.62
		= $.22X_{48}-.16X_5+.79X_{29}+7.3$	2.02	.63
53.	Abdomen	S.F. = $1.29X_{48}+5.13$	7.50	.77
		= $.98X_{48}+.30X_1-13.6$	7.15	.79
		= $.85X_{48}+.43X_1-.34X_2+38.1$	6.96	.81
54.	Suprailiac	= $.36X_{48}+1.4$	4.44	.49
	S.F.	= $.37X_{48}-.38X_5+19.9$	4.33	.53
		= $.37X_{48}-.38X_5+1.5X_{29}+14.7$	4.32	.54
57.	Specific	= $-.0008X_1+1.1$	.01	.80
	Gravity	= $-.0011X_1+.0012X_2+.93$	.001	.99
		= $-.0011X_1+.0013X_2+.0005X_3+.93$	.001	.99

APPENDIX D-2 (cont.)

Variable		Formula	SE	R
58.	Percent Body	= $.39X_1 - 15.6$	3.37	.80
	Fat	= $.54X_1 - .62X_2 + 81.5$	.60	.99
		= $.54X_1 - .62X_2 + .02X_{48} + 81.2$	.59	.99
59.	Body Surface	= $.01X_1 + .98$	.05	.95
		= $.01X_1 + .01X_2 - .32$	.01	.99
		= $.01X_1 + .01X_2 + .0003X_{48} - .3$	.01	.99

* = FACTOR SELECTED FOR REGRESSION ANALYSIS

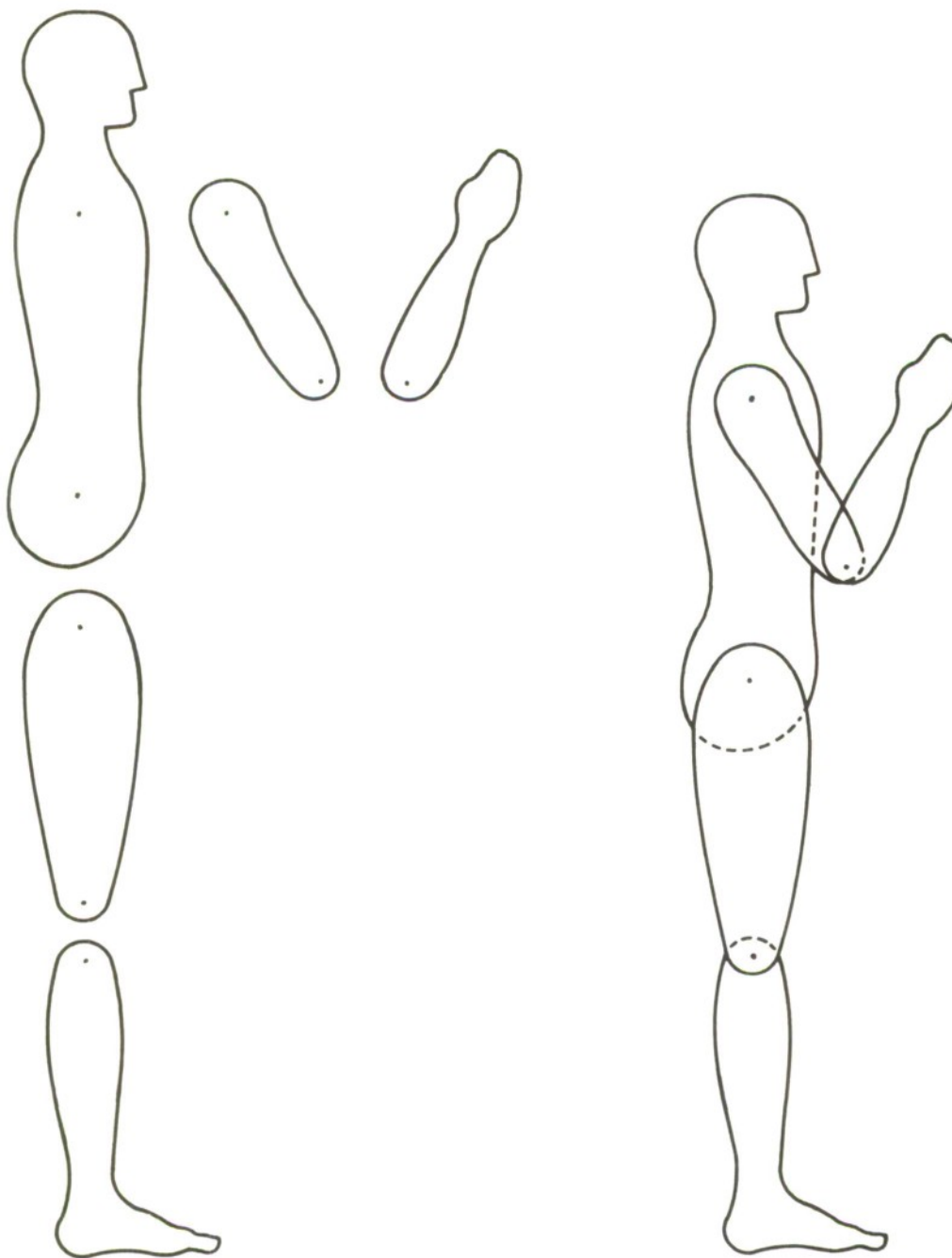
APPENDIX E



SCALE 1" = 1' - 0"



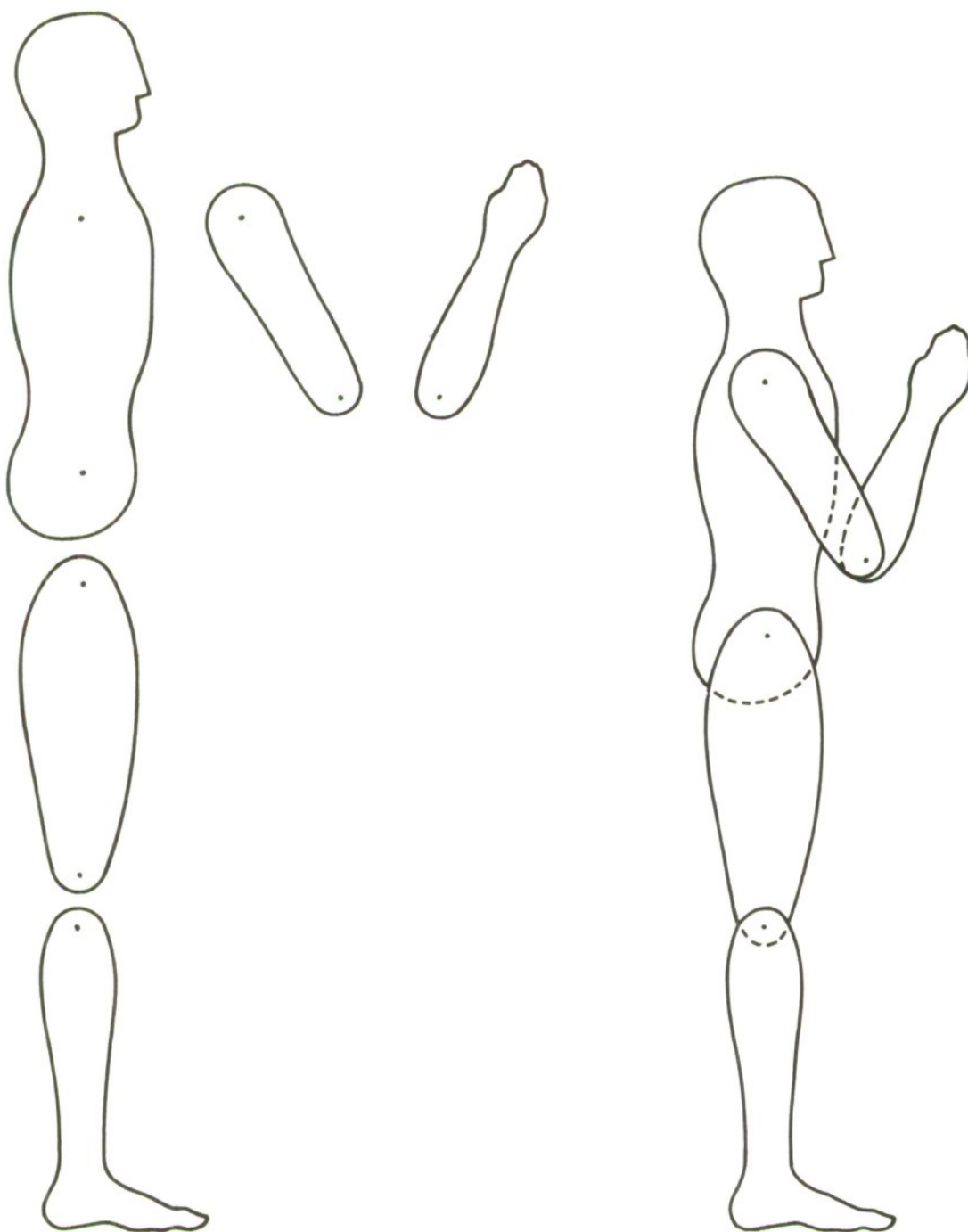
Scale Model of the
5th Percentile Navy
Diver



SCALE 1" = 1' - 0"



Scale Model of the
50th Percentile Navy
Diver



SCALE 1" = 1' - 0"



Scale Model of the
95th Percentile Navy
Diver

Unclassified

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<p>To aid the design engineer in the development of future U.S. Navy diving systems and equipment a comprehensive anthropometric study was undertaken. Fifty-four anthropometric measures, two pulmonary function measures, and three derived body measures were obtained on 100, 41, and 100 U.S. Navy divers respectively. Descriptive statistics and measures of interrelationship are given for each measured and derived variable. The minimum number of anthropometric variables needed was determined by factor analysis. The measures obtained on the U.S. Navy divers were compared with anthropometric data available for the male aviation populations.</p>			

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